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OF THE
ASIATIC SOCIETY OF BENGAL.

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VOL. LX.

PART I. (HISTORY, ANTIQUITIES, &c.)

(Nos. I TO III.—1891.)

EDITED BY
THE HONORARY PHILOLOGICAL SECRETARY.

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"It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.

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1892.

CONTENTS.

JOURNAL, ASIATIC SOCIETY OF BENGAL, VOL. LX,
PART I, FOR 1891.

No. I.

	Page
<i>Report on Archæological Excavations in Bijnor, N.-W. P.—By A. MACAULAY MARKHAM, C. S., F. R. G. S., F. Z. S.</i>	1
<i>The Coins of the Chaghatai Moghuls. (With four plates.)—By E. E. OLIVER,</i>	8

No. II.

<i>Report on the Boria or Lakha Medi Stûpa near Junagadh.—By HENRY COUSENS, M. R. A. S., Archæological Surveyor of Western India. (With a Plate.)</i>	17
<i>Notes on some Kolarian Tribes.—No. II.—By W. H. P. DRIVER ...</i>	24
<i>Há-shang-rgyal-po and Ug-tad, a Dialogue. From the Tibetan.—By KARL MARX, Missionary at Leh, Ladakh</i>	37
<i>Life of Atisa (Dípaṅkara Srijñāna).—By BÁBÚ SARAT CHANDRA DÁS, C. I. E.... ..</i>	46
<i>Place and River-Names in the Darjiling District and Sikkim.—By L. A. WADDELL, M. B.</i>	53
<i>On the Date of the Bower MS.—By A. F. RUDOLF HOERNLE, PH. D.,</i>	79

No. III.

<i>Three Documents relating to the History of Ladakh: Tibetan Text, Translation and Notes.—By the late DR. KARL MARX, Moravian Missionary at Leh, Ladakh</i>	97
<i>An instalment of the Bower Manuscript.—By DR. A. F. RUDOLF HOERNLE</i>	135

LIST OF PLATES

IN

JOURNAL, ASIATIC SOCIETY OF BENGAL, VOL. LX,
PART I, FOR 1891.

Plates I—IV, (pp. 10—16) Coins of the Chaghatái Mughals.

Plate V, (p. 19) Relics from the Boria or Lakka Medi Stúpa near
Junagadh.

PROCEEDINGS

OF THE

ASIATIC SOCIETY OF BENGAL

EDITED BY

THE HONORARY SECRETARIES,



JANUARY TO DECEMBER,

1891.



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CONTENTS.

				<i>Pages</i>
Proceedings for January 1891	1—12
Ditto for February	„ (including Annual Report)	13—44
Ditto for March	„	...	...	45—52
Ditto for April	„	...	...	53—80
Ditto for May	„	...	...	81—92
Ditto for June	„	...	...	93—100
Ditto for July	„	...	...	101—110
Ditto for August	„	...	...	111—128
Ditto for November	„	...	...	129—152
Ditto for December	„	...	...	153—180

List of Members of the Asiatic Society on the 31st December
1890 (Appendix to the Proceedings for February 1891) i—xvi

Abstract Statement of Receipts and Disbursements of the Asiatic Society for the year 1890 (Appendix to the Proceedings for February 1891) xvii—xxix

LIST OF PLATES.

I.—Leaves from a Birch-bark manuscript found in an under-ground ancient city near Kuchar, Eastern Turkestan	...	...	...	(p. 54)
II.—Paradise of the Northern Buddhists	...	...	...	(p. 70)
III.—Copper Buddhist Chaitya from Ashrafpur in Bengal...				(p. 119)



LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL.
ON THE 31ST DECEMBER 1890.

LIST OF OFFICE-BEARERS AND MEMBERS OF
COUNCIL FOR THE YEAR 1890.

President.

H. Beveridge, Esq., C. S.

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Col. J. Waterhouse, B. S. C.

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Hon. Sir A. W. Croft, K. C. I. E., M. A.

Prince Jahán Qadr Muhammad Wáhid Alí, Bahádur.

Bábu Gaurdás Bysack.

Dr. A. Crombie.

Bábu Pratápachandra Ghosha, B. A.

C. H. Tawney, Esq., M. A.

L. de Nicéville, Esq., F. E. S.

LIST OF ORDINARY MEMBERS.

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R. = Resident. N. R. = Non-Resident. A. = Absent. N. S = Non-Subscribing  
L. M. = Life Member. F. M. = Foreign Member.

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N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue Members of the Society; otherwise, in accordance with Rule 40 of the Bye-Laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

Date of Election.		
1860 Dec. 5.	R.	Abdul-Latíf, Nawáb Bahádur, C. I. E. <i>Calcutta</i> .
1888 Feb. 1.	N.R.	Adamson, Major Charles Henry Ellison, M. S. C., Deputy Commissioner. <i>Rangoon</i> .
1889 Nov. 6.	R.	Adie, J. R., M. B., Surgeon, Eden Hospital. <i>Calcutta</i> .
1860 July 4.	N.R.	Ahmad Khán, Bahádur, Hon. Maulvi Sir Sayid, K. C. S. I. <i>Aligarh</i> .
1888 April 4.	R.	Ahmud, Maulvi, Khán Bahádur, Arabic Professor, Presidency College. <i>Calcutta</i> .
1872 April 3.	N.R.	Ashán-ullah, Khán Bahádur, Nawáb. <i>Dacca</i> .
1888 Feb. 1.	N.R.	Alcock, Alfred William, M. B., Surgeon Naturalist, Marine Survey Department.
1884 Mar. 5.	L.M.	Ali, Sir Ali Qadr Syud Hassan, Nawáb Bahádur, K. C. I. E. <i>Murshedabad</i> .
1874 June 3.	R.	Amír Ali, Hon. C. I. E., M. A. Barrister-at-Law, Judge, High Court. <i>Calcutta</i> .
1865 Jan. 11.	F.M.	Anderson, John, M. D., F. R. S., F. L. S. <i>Europe</i> .
1884 Sept. 3.	R.	Anderson, J. A. <i>Calcutta</i> .
1887 June 1.	R.	Apjohn, J. H., M. I. C. E., P. W. Dept. <i>Calcutta</i> .
1890 July 2.	N.R.	Arnold, Thomas Walker, B. A., M. R. A. S., Professor, Muhammadan Anglo-Oriental College. <i>Alighar</i> .
1869 Feb. 3.	N.R.	Attar Singh, Bahádur, Mahámahopádhyaýa Sirdár, Sir, K., C. I. E., M. U. F., Chief of Bhadour. <i>Ludiana</i> .
1889 Aug. 29.	N.R.	Aziz-ud-din Ahmad, Deputy Collector and Magistrate. <i>Jaunpur</i> .

Date of Election.		
1870 Feb. 2.	L.M.	Baden-Powell, Baden Henry, C. I. E., C. S. <i>Europe.</i>
1865 Nov. 7.	N.S.	Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe.</i>
1889 May 1.	R.	Banerji, Hon. Dr. Gurudás, M. A., D. L., Judge, High Court. <i>Calcutta.</i>
1862 Aug. 1.	N.R.	Barclay, Arthur, M. B., Surgeon Major, Sec. to Surgeon General and Sanitary Commissioner with the Govt. of India. <i>Simla.</i>
1869 Dec. 1.	L.M.	Barker, R. A., M. D., Civil Surgeon. <i>Serampore.</i>
1877 Jan. 17.	N.R.	Barman, Kishor Kumár Rádhá Dev, Juvráj of Hill Tipperah. <i>Tipperah.</i>
1885 Nov. 4.	R.	Barman, Dámudar Dás. <i>Calcutta.</i>
1887 Aug. 3.	R.	Basu, Haricharan. <i>Calcutta.</i>
1886 June 2.	F.M.	Baumgarten, Casper Wilhelm. <i>Batavia.</i>
1864 Sept. 7.	N.R.	Beames, John, C. S., Commissioner, Bhaugulpore Division.
1878 Sept. 25.	N.R.	Beighton, T. D., C. S., Judge. <i>Dacca.</i>
1876 Nov. 15.	R.	Beveridge, Henry, C. S., District and Sessions Judge. <i>Alipur.</i>
1878 Oct. 4.	R.	Bhakta, Krishna Gopál. <i>Calcutta.</i>
1879 Mar. 5.	N.R.	Biddulph, Col. J., B. S. C. <i>Ajmere.</i>
1884 Jan. 2.	A.	Bidie, G., Surgeon-General C. I. E., F. L. S., M. B., <i>Europe.</i>
1884 Feb. 6.	N.R.	Bigg-Wither, Major A. C., B. A., A. I. C. E. <i>Quetta.</i>
1885 Mar. 4.	N.R.	Bilgrámi, Syud Áli, B. A., A. R. S. M., F. G. S. <i>Hyderabad.</i>
1886 Aug. 4.	N.R.	Bingham, Major Charles Thomas, B. S. C., Deputy Conservator of Forests. <i>Burmah.</i>
1857 Mar. 4.	L.M.	Blanford, H. F., A. R. S. M., F. R. S., F. G. S. <i>England.</i>
1859 Aug. 3.	L.M.	Blanford, W. T., A. R. S. M., F. R. S., F. G. S., F. R. G. S., F. Z. S. <i>London.</i>
1885 Mar. 4.	R.	Bolton, C. W., C. S., 24-Pergunnahs.
1890 July 2.	R.	Bonnerjee, Womes Chunder, Barrister, Middle Temple. <i>Calcutta.</i>
1880 Nov. 3.	N.R.	Bose, Pramatha Náth, B. Sc., F. G. S., Geological Survey of India.
1890 Dec. 3.	N.R.	Bose, Rai Nali Naksha, Bahádur, Chairman Burdwan Municipality. <i>Burdwan.</i>
1876 Nov. 15.	N.R.	Bowie, Colonel, M. M. Inspector General of Police C. P. <i>Nagpur.</i>
1868 Jan. 15.	N.R.	Boxwell, John, C. S., Commissioner, Patna Division.
1876 May 4.	N.R.	Bradshaw, Deputy Surgeon-General A. F., Honorary Surgeon to the Viceroy, M. D. <i>Rawal Pindi.</i>
1890 Dec. 3.	R.	Brame, Captain A. <i>Calcutta.</i>
1860 Mar. 7.	L.M.	Brandis, Sir Dietrich, K. C. I. E., C. I. E., Ph. D., F. L. S., F. R. S. <i>Europe.</i>

Date of Election.		
1887 May 4.	R.	Burál, Nobinchánd, Solicitor. <i>Calcutta.</i>
1862 Feb 5.	L.M.	Bysack, Gaurdás. <i>Calcutta.</i>
1879 April 2.	R.	<i>Calcutta</i> , The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i>
1880 Mar. 3.	A.	Carlleyle, A. C., Archæological Survey of India. <i>Europe.</i>
1881 Feb. 2.	N.R.	Carter, Philip John, Deputy Conservator of Forests. <i>Burmah.</i>
1890 June 4.	N.R.	Chakravartí, Man Mohan, M. A., B. L., Deputy Magistrate. <i>Puri.</i>
1889 April 3.	R.	Chandra, Goneschandra, Solicitor. <i>Calcutta.</i>
1881 Mar. 2.	N.R.	Channing, Francis Chorley, c. s. <i>Hoshiarpur.</i>
1880 Jan. 7.	R.	Chaudhuri, Govinda Kumár. <i>Calcutta.</i>
1861 Mar. 1.	N.R.	Chaudhuri, Harachandra, Zemindar. <i>Sherpur Mymensingh.</i>
1880 Nov. 3.	N.R.	Chaudhuri, Rái Khired Chandra. Deputy Inspector of Schools, Sonthal Pergunnahs. <i>Dumka.</i>
1886 April 7.	N.R.	Chaudhuri, Rádháballabha. <i>Sherpur, Mymensingh.</i>
1885 Feb. 4.	N.R.	Chaudhuri, Rájá Suryakánta, Bahádur. <i>Mymensingh.</i>
1890 Feb. 5.	A.	Chuckerbutty, A. Goodeve, B. C. s. <i>Europe.</i>
1889 Sept. 26.	N.R.	Chuckerbutty, Rájá Ramranjan, Bahádur. <i>Hitampur, Beerbhoom.</i>
1885 April 1.	N.R.	Clark, H. Martyn, M. B. <i>Amritsar.</i>
1877 Aug. 30.	R.	Clarke, Lieut.-Col. Henry Wilberforce, R. E. <i>Calcutta.</i>
1880 Aug. 26.	F.M.	Clerk, Colonel Malcolm G. <i>Europe.</i>
1881 May 4.	N.R.	Cockburn, John, Asst. Sub-Deputy Opium Agent. <i>Karwi, Banda, N.-W. P.</i>
1888 Nov. 1.	N.R.	Collett, Brigadier General, Henry, C. B., F. L. S. <i>Shillong, Assam.</i>
1889 Nov. 6.	R.	Colville, William Brown. <i>Calcutta.</i>
1886 Aug. 26.	F.M.	Condanhove, Count H., Attaché Austro-Hungarian Legation. <i>Constantinople.</i>
1890 Dec. 3.	R.	Connan, William, C. E., Public Works Department. <i>Calcutta.</i>
1874 Nov. 4.	F.M.	Constable, Archibald, M. I. C. E. <i>England.</i>
1884 Aug. 6.	R.	Cotes, Everard Charles, Indian Museum. <i>Calcutta.</i>
1876 Mar. 1.	R.	Crawford, James, B. A., c. s., Barrister-at-Law, Offg. District and Sessions Judge. <i>Hughli.</i>
1887 Aug. 25.	R.	Criper, William Risdon, F. C. S., F. I. C., A. R. S. M. <i>Kasipur.</i>
1877 June 6.	R.	Croft, The Hon. Sir A. W., K. C. I. E., M. A., Director of Public Instruction, Bengal. <i>Calcutta.</i>
1874 Mar. 4.	R.	Crombie, Alexander, M. D., Surgeon Major, Presidency General Hospital. <i>Calcutta.</i>
1888 Dec. 5.	N.R.	Crooke, William, B. A., c. s., Magistrate and Collector. <i>Mirzapur.</i>

Date of Election.		
1873 Aug. 6.	R.	Cunningham, David Douglas, Surgeon-Major. Honorary Surgeon to the Viceroy. <i>Calcutta</i> .
1873 Dec. 3.	N.R.	Dames, Mansel Longworth, c. s., Asst. Commissioner. <i>Dera Ghazi Khan</i> .
1877 June 6.	N.R.	Darbhangha, Sir Luchmessur Sing, Bahádur, K. C. I. E., Mahárajá of. <i>Darbhangha</i> .
1865 June 7.	N.R.	Dás, Rájá Jaykrishna, Bahádur, c. s. i. <i>Bijnor</i> .
1879 April 7.	N.R.	Dás, Rám Saran, M. A., Secy., Oudh Commercial Bank, Limited. <i>Fyzabad, Oudh</i> .
1885 May 6.	N.R.	Dé, Rájá Baikuntanáth, Bahádur. <i>Balasore</i> .
1889 May 1.	N.R.	Delawar Hosaen Ahmed, Meerza. <i>Gya</i> .
1862 May 7.	N.R.	Dhanapati Singh Dughar, Rai Bahádur. <i>Azimganj</i> .
1877 July 4.	R.	Diler Jang, Nawáb Syad Ashgar Ali, Khán Bahádur, c. s. i. <i>Calcutta</i> .
1890 July 2.	R.	Donaldson, P. <i>Calcutta</i> .
1886 June 2.	R.	Doyle, Patrick, C. E., F. G. S., M. R. A. S. <i>Calcutta</i> .
1887 Nov. 2.	N.R.	Driver, Walter Henry Parker. <i>Ranchi, Lohardugga</i> .
1889 Jan. 2.	N.R.	Dudgeon, Gerald Cecil, Lebong Tea Company. <i>Darjeeling</i> .
1879 Feb. 5.	N.R.	Duthie, J. F., Director, Government Botanical Survey, Northern India. <i>Saharanpur</i> .
1877 Aug. 30.	N.R.	Dutt, Kedarnáth, Depy. Collector. <i>Cuttack</i> .
1890 Sept. 25.	N.R.	Dutt, Romesh Chunder, B. C. S., Barrister at-Law, Middle Temple, Magistrate and Collector. <i>Dinajpur</i> .
1870 Mar. 9.	L.M.	Edinburgh, H. R. H. The Duke of. <i>Europe</i> .
1871 Dec. 2.	N.R.	Eliot, J., M. A., Meteorological Reporter to the Govt. of India. <i>Simla</i> .
1886 Jan. 6.	R.	Elson, Samuel R. Bengal Pilot Service. <i>Calcutta</i> .
1876 Jan. 5.	F.M.	Feistmantel, Ottokar, M. D. <i>Europe</i> .
1879 July 2.	R.	Finucane, M. C. S., Director of Agriculture, Bengal. <i>Calcutta</i> .
1869 Sept. 1.	A.	Fisher, John Hadden, C. S. <i>Europe</i> .
1886 April 7.	N.R.	Fleet, John Faithfull, C. I. E., C. S. <i>Bijapur, Bombay</i> .
1876 July 5.	N.R.	Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S. <i>Salem, Madras Presidency</i> .
1880 April 7.	N.R.	Gajapati, Ananda Rám, K. C. I. E., Rájá of Vizianagram. <i>Vizianagram</i> .
1873 Dec. 3.	N.R.	Gamble, J. S., M. A., Conservator of Forests. <i>Dehra Dún</i> .
1859 Aug. 3.	L.M.	Gastrell, General James Eardley. <i>Europe</i> .
1867 Dec. 4.	A.	Gay, E., M. A., F. R. A. S. <i>Europe</i> .
1889 Jan. 2.	R.	Ghose, Jogendrachandra, M. A., B. L. <i>Calcutta</i> .
1883 Aug. 30.	R.	Ghose, Manmohan. <i>Calcutta</i> .

Date of Election.		
1889 Mar. 6.	R.	Ghosha, Bhupendra Sri. <i>Calcutta.</i>
1869 Feb. 3.	R.	Ghosha, Pratápechandra, B. A. <i>Calcutta.</i>
1884 Dec. 3.	N.R.	Giles, George, M. J., M. B., F. R. C. S., Civil Medical Officer, Lawrence Military Asylum. <i>Sanawar.</i>
1886 Sept. 30.	N.R.	Gimlette, George Hart Desmond, Surgeon, Bengal Medical Service, M. D., M. CH., M. R. C. S., L. S. A. Goona Political Agency. <i>Central India.</i>
1861 Feb. 5.	N.S.	Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S., F. R. G. S. <i>Europe.</i>
1890 Aug. 6.	R.	Goethals, S. J., The Most Rev. Dr. Paul, Archbishop of Calcutta.
1882 May 3.	R.	Golám Sarwar, Maulavi. <i>Calcutta.</i>
1881 Mar. 2.	R.	Gosáin, Hem Chunder. <i>Calcutta.</i>
1876 Nov. 15.	N.R.	Grierson, George Abraham, C. S. <i>Gya.</i>
1885 Dec. 2.	N.R.	Griesbach, C. L., C. I. E., F. G. S., Deputy Superintendent, Geological Survey of India.
1861 Feb. 6.	N.R.	Growse, Frederick Salmon, C. I. E., M. A., C. S., Magistrate and Collector. <i>Farrukhabad, N.-W. P.</i>
1886 Mar. 3.	N.R.	Gupta, Asutosh, C. S., Assistant Magistrate and Collector. <i>Mymensing.</i>
1888 July 4.	R.	Gupta, Rajanikánta. <i>Calcutta.</i>
1889 June 5.	F.M.	Hamilton, Rev. Walter A., Chaplain, Bengal Establishment. <i>Europe.</i>
1883 Jan. 3.	A.	Harding, Francis Henry, B. A., C. S. <i>Europe.</i>
1890 June 4.	R.	Heilgers, Robert Philip, Consul for H. I. M. the Emperor of Austria and Hungary, Knight of the Imperial Order of the Iron Crown, Commandeur Ordre Impériale de Medjidié, F. R. G. S., F. R. S. S. <i>Calcutta.</i>
1875 Mar. 3.	N.R.	Hendley, Surgeon Major Thomas Holbein, C. I. E. <i>Jeypore.</i>
1890 April 2.	R.	Hickson, F. G. <i>Calcutta.</i>
1872 Dec. 5.	A.	Hoernle, A. F. R., PH. D., Principal of the Calcutta Madrasa. <i>Europe.</i>
1878 Mar. 6.	N.R.	Hoey, W., C. S. <i>Banda.</i>
1886 June 2.	A.	Hogg, Alexander. <i>Europe.</i>
1884 Mar. 5.	N.R.	Hooper, John, C. S., Settlement Officer. <i>Basti, N.-W. P.</i>
1873 Jan. 2.	L.M.	Houstoun, G. L., F. G. S. <i>Europe.</i>
1863 Jan. 15.	N.R.	Howell, Mortimer Sloper, C. S., C. I. E. <i>Shahjahanpur.</i>
1878 Sept. 25.	N.R.	Hughes, G., C. S., Deputy Commissioner. <i>Ludhiana.</i>
1867 Aug. 7.	N.R.	Hughes, T. W. H., A. R. S. M., F. G. S., Superintendent, Geological Survey of India.
1870 Jan. 5.	N.R.	Hume, Allan Octavian, C. B., C. S. <i>Simla.</i>
1884 May 2.	N.R.	Hussein, Syud, B. A., Secy. to Nizam of Hyderabad's Council. <i>Hyderabad.</i>
1890 Dec. 3.	R.	Hyde, Rev. Henry Barry, M. A., Bengal Ecclesiastical Establishment. <i>Calcutta.</i>

Date of Election.		
1872 Dec. 4.	N.R.	Ibbetson, Denzil Charles Jelf, c. s. Deputy Commissioner. <i>Gujranwala, Panjab.</i>
1866 Mar. 7.	F.M.	Irvine, William c. s. <i>Europe.</i>
1884 May 2.	N.R.	Iskander Ali Mirza, Prince. <i>Murshedabad.</i>
1880 Dec. 1.	A.	Jackson, William Grierson, c. s. <i>Europe.</i>
1869 Aug. 4.	R.	Jahán Qadr Muhammad Wáhid Ali, Bahádur, Prince. <i>Garden Reach, Calcutta.</i>
1879 Mar. 5.	R.	Jarrett, Lt.-Col. H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i>
1881 Feb. 2.	N.R.	Jenkins, Major Thomas Morris, M. S. C. Deputy Commissioner. <i>Tavoy.</i>
1889 Mar. 6.	R.	Jobbins, William Henry, Principal, Government School of Art. <i>Calcutta.</i>
1873 Dec. 3.	N.R.	Johore, H. H. the Maharájá of, K. C. S. I. <i>New Johore, Singapore.</i>
1882 Mar. 1.	N.R.	Kennedy, Pringle, M. A. <i>Mozufferpur.</i>
1874 Dec. 2.	N.R.	Khudá Baksh, Khán Bahádur, Maulavi. <i>Bankipur.</i>
1884 Nov. 5.	N.R.	Kitts, Eustace John, c. s. <i>Moradabad.</i>
1867 Dec. 4.	R.	King, Brigade Surgeon G. C. I. E., M. B., F. L. S., Supdt., Royal Botanic Garden. <i>Sibpur.</i>
1881 Mar. 2.	N.R.	King, Lucas White, B. A., LL. B., C. S., Deputy Commissioner. <i>Dehra Ismail Khan.</i>
1862 Jan. 15.	R.	King, W., B. A., D. Sc., Director, Geological Survey of India. <i>Calcutta.</i>
1889 Mar. 6.	R.	Khunnah, Jagánath. <i>Calcutta.</i>
1890 April 2.	N.R.	Lake, Philip, B. A., (Cantab.), Geological Survey of India.
1889 July 3.	N.R.	Lal, Pandit Brij Bukhan. Public Works Department. <i>Kurnal, Panjab.</i>
1887 May 4.	L.M.	Lanman, Charles R. Corresponding Secretary of the American Oriental Society, Professor of Sanskrit in Harvard College. <i>Cambridge, Mass. U. S. America.</i>
1877 Sep. 27.	N.R.	La Touche, James John Digges, B. A., C. S., Collector and Magistrate. <i>Aligarh.</i>
1889 Mar. 6.	N.R.	La Touche, Thomas Henry Digges, M. A. Deputy Superintendent, Geological Survey of India.
1889 Nov. 6.	R.	Lee, W. A. <i>Calcutta.</i>
1881 Mar. 2.	N.R.	Lee, J. Bridges, M. A., F. G. S., F. C. S., F. Z. S., Barrister-at-Law. <i>Lahore.</i>
1888 Feb. 1.	N.R.	Lee, William Herbert, c. s. <i>Sylhet.</i>
1880 July 7.	A.	Lewis, Rev. Arthur, B. A. <i>Europe.</i>
1889 Feb. 6.	R.	Little, C., M. A., Bengal Education Department. <i>Calcutta.</i>
1886 Sep. 30.	R.	Luson, Hewling, c. s., Under Secretary Government of Bengal. <i>Calcutta.</i>

Date of Election.		
1869 July 7.	R.	Lyall, Charles James, B. A., C. S., Secretary Government of India, H. D. <i>Calcutta.</i>
1870 April 7.	L.M.	Lyman, B. Smith. <i>Philadelphia, Pa., U. S., America.</i>
1884 Dec. 3.	N.R.	McCabe, R. B., c. s., Deputy Commissioner. <i>Tezpur, Assam.</i>
1868 Dec. 2.	N.R.	Macauliffe, Michael, B. A., C. S., Divisional Judge. <i>Sialkot.</i>
1879 Feb. 5.	N.R.	Macgregor, Lieut.-Col. C. R., F. R. G. S., 1st Burma Infantry. <i>Mandalay.</i>
1848 April 5.	L.M.	Maclagan, General Robert, R. E., LL. D., F. R. S. E., F. R. G. S. <i>Europe.</i>
1873 Dec. 3.	R.	MacLeod, Kenneth, M. D., Brigade Surgeon. <i>Calcutta.</i>
1880 May 5.	N.R.	MacLeod, Roderick Henry, C. S. Asst. Magte. <i>Kasia, Gorakhpur, N.-W. P.</i>
1881 July 6.	R.	Mahomed Firukh Sháh, Prince. <i>Calcutta.</i>
1886 Jan. 6.	N.R.	Mahomed Latif Khán, Sayyid, Khán Bahádur. <i>Jhang. Panjab.</i>
1882 Aug. 2.	R.	Mahomed Yusoof, Hon. Maulavi. <i>Calcutta.</i>
1888 July 4.	N.R.	Mahomed Zainool Abideen Khán Bahádur Feroze Jung, Nawab Syud (Nizamut Family). <i>Murshedabad.</i>
1867 April 3.	R.	Mainwaring, Lieutenant-General George Byres, s. c. <i>Serampur.</i>
1889 Jan. 2.	R.	Maliáh, Kumár Rameswár. <i>Calcutta.</i>
1869 Sept. 1.	R.	Mallik, Yadulál. <i>Calcutta.</i>
1889 Mar. 6.	R.	Mann, John, M. A. Bengal Education Department. <i>Hnghli.</i>
1869 July 7.	N.R.	Markham, Alexander Macaulay, C. S., F. R. G. S., Divisional Judge. <i>Meerut.</i>
1886 Aug. 26.	N.R.	Meade, Capt. Malcolm John, s. c., Political Agent. <i>Bhopawar.</i>
1860 Mar. 7.	A.	Medlicott, H. B., M. A., F. R. S., F. G. S. <i>England.</i>
1886 Mar. 3.	L.M.	Mehtá, Rustomjee Dhunjeebhoy. <i>Calcutta.</i>
1884 Nov. 5.	N.R.	Middlemiss, C. S., A. B., Assistant Superintendent, Geological Survey of India.
1871 Sept. 6.	N.R.	Miles, Colonel S. B., B. O. S. C., Political Agent. <i>Oodeypur.</i>
1884 Sept. 3.	R.	Miles, William Harry. <i>Calcutta.</i>
1870 July 6.	R.	Miller, A. B., B.A., Barrister-at-Law, Official Trustee. <i>Calcutta.</i>
1874 May 6.	N.R.	Minchin, F. J. V. <i>Aska, Ganjam.</i>
1856 Mar. 5.	R.	Mitra, Rájá Rájendralála, LL. D., C. I. E. <i>Calcutta.</i>
1890 Dec. 3.	N.R.	Mitra, Varana Charana. Joint Magistrate. <i>Beguserai, Monghyr.</i>
1876 Dec. 6.	N.R.	Mockler, Col. E., Political Agent. <i>Muscat.</i>
1886 May 5.	A.	Molesworth, Capt. E. H. Commandant, Police Levy, <i>Debrugark. Europe.</i>

Date of Election.		
1881 May 4.	A.	Molloy, Lieut.-Col. Edward, 5th Goorkhas. <i>Europe.</i>
1864 Nov. 2.	N.R.	Muir, J. W., M. A., C. S. <i>Azimgarh.</i>
1879 May 7.	R.	Mukerjea, Bhudeva, C. I. E. <i>Calcutta.</i>
1867 Mar. 6.	R.	Mukerjea, Rájá, The Hon. Pearimohan, C. S. I., M. A. <i>Uttarpara.</i>
1885 July 1.	R.	Mukerjea, Nilmani, Professor, Sanskrit College. <i>Calcutta.</i>
1890 July 2.	R.	Mukharji, T. N. <i>Calcutta.</i>
1886 May 5.	R.	Mukhopádhya, Asutosh, M. A., F. R. A. S., F. R. S. E. <i>Calcutta.</i>
1887 May 4.	R.	Munro, Thomas R., Port Commissioners Department. <i>Calcutta.</i>
1885 June 3.	N.R.	Naemwoollah, Maulaví, Depy. Magte. <i>Bulandshahr.</i>
1887 June 1.	N.R.	Narain, Ráo Govind Ráo. <i>Allahabad.</i>
1876 May 4.	R.	Nash, A. M., M. A., Inspector of European Schools, Bengal. <i>Calcutta.</i>
1881 Nov. 2.	R.	Nicéville, L. de., F. E. S. <i>Calcutta.</i>
1889 Aug. 29.	L.M.	Nimmo, John Duncan. <i>Calcutta.</i>
1887 April 6.	R.	Noetling, Fritz, Ph. D. Palæontologist to the Geological Survey of India. <i>Calcutta.</i>
1869 July 7.	N.R.	Nursing Ráo, A. V., Ráo Bahádur, F. R. A. S. <i>Vizagapatam.</i>
1885 Feb. 4.	R.	Nyáyaratna, Pandit Mahámahopádhya Maheshchandra, C. I. E. <i>Calcutta.</i>
1879 Aug. 28.	F.M.	Oldham, Brigade-Surgeon, C. F., F. R. G. S. <i>Europe.</i>
1883 Dec. 1.	N.R.	Oldham, R. D., A. R. S. M., F. G. S., Deputy Superintendent, Geological Survey of India.
1883 Aug. 30.	N.R.	Oliver, Edw. Emmerson, M. I. C. E. <i>Lahore.</i>
1885 Feb. 4.	N.R.	Oliver, James William, Forest Dept. <i>Burmah.</i>
1887 July 6.	R.	Oung, Moung Hla, Financial Department, Government of India. <i>Calcutta.</i>
1880 Aug. 4.	L.M.	Pandia, Pandit Mohanlál Vishnulál, F. T. S., Member and Secy., Royal Council of Meywar. <i>Udaipur.</i>
1888 Feb. 1.	L.M.	Pandit, Hon. Ajodhianath. <i>Allahabad.</i>
1880 Jan. 7.	N.R.	Pargiter, Frederick, E., B. A., C. S. <i>Rajshahye.</i>
1862 May 7.	L.M.	Partridge, Samuel Bowen, M. D., Surgeon-Major. <i>Europe.</i>
1871 Dec. 6.	N.R.	Peal, S. E. <i>Sibsagar, Assam.</i>
1873 Aug. 6.	R.	Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i>
1888 June 6.	L.M.	Pennell, Aubray Percival, B. A., C. S. <i>Burma.</i>
1865 Sept. 6.	N.R.	Peppé, T. F. Tiril Tea Estate. <i>Ranchi, Lohardugga.</i>

Date of Election.		
1881 Aug. 25.	R.	Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i>
1877 Aug. 1.	N.R.	Peters, C. T., M. B., Surgeon Major. <i>Bijapur, Bombay.</i>
1889 Nov. 6.	N.R.	Phillott, Capt. D. C., Adjutant 3rd Panjab Cavalry. <i>Dera Ismail Khan.</i>
1890 Mar. 5.	N.R.	Pilcher, Jesse Griggs, Deputy Surgeon General. <i>Nagpur.</i>
1889 Mar. 6.	R.	Prain, David, M. A., M. B., L. R. C. S., I. R. S. E., I. L. S., Royal Botanic Garden. <i>Sibpur.</i>
1889 Mar. 6.	N.R.	Prasad, Hanuman, Raes and Zemindar. <i>Ohunar.</i>
1889 Nov. 6.	N.R.	Prasada, Pandit Jwála, M. A., Assistant Commissioner. <i>Rai Bareli.</i>
1881 Feb. 2.	N.R.	Prideaux, Colonel William Francis, B. S. C., Resident. <i>Kashmir.</i>
1880 April 7.	N.R.	Rai, Bipina Chandra, B. L. <i>Rannaghat, Nuddea.</i>
1887 May 4.	A.	Ráy, Prasannakumár, D. Sc., (Lond. and Edin.) Professor, Presidency College. <i>Europe.</i>
1889 June 5.	R.	Raye, Brigade Surgeon Daniel O'Connell, M. D. <i>Calcutta.</i>
1880 Aug. 4.	N.R.	Reynolds, Herbert William Ward, C. S. <i>Mirzapur.</i>
1884 Mar. 5.	R.	Risley, H. H., B. A., C. S. <i>Calcutta.</i>
1860 Jan. 3.	N.R.	Rivett-Carnac, John Henry, C. I. E., F. S. A., C. S., Opium Agent. <i>Ghazipur.</i>
1889 June 5.	A.	Rowe, F. J., M. A., Bengal Education Department. <i>Europe.</i>
1888 July 4.	N.R.	Roy, Kírán Chándra, Zemindar. <i>Narail, Jessore.</i>
1888 June 6.	R.	Roy, Kumár Denendro Nárayán. <i>Calcutta.</i>
1890 Mar. 5.	N.R.	Roy, Maharájá Girjanath. <i>Dinajpur.</i>
1888 June 6.	R.	Roy, Peary Mohun. <i>Calcutta.</i>
1888 Sep. 27.	N.R.	Roy, Upendra Chándra, Zemindar. <i>Narail, Jessore.</i>
1885 Mar. 4.	R.	Rustomjee, H. M. <i>Calcutta.</i>
1889 June 5.	N.R.	Sadler, Major J. Hayes, B. S. C. <i>Baroda.</i>
1880 Sep. 30.	A.	Sage, E. M., Ex. Engineer, P. W. D. <i>Europe.</i>
1890 Dec. 3.	N.R.	Samuells, C. A., C. S. <i>Maldah.</i>
1887 June 1.	A.	Sandberg, Rev. Graham, B. A., Barrister-at-Law, Inner Temple. Chaplain. <i>Europe.</i>
1872 Dec. 4.	R.	Sarasvati, Pandit, Pránnáth, M. A., B. L. <i>Bhowanipur.</i>
1867 April 3.	R.	Sarkár, the Hon. Dr. Mahendralál, C. I. E. <i>Calcutta.</i>
1885 Mar. 4.	R.	Sarvádrikári, Rájkumár, Rai Bahádur. <i>Calcutta.</i>
1885 Feb. 4.	R.	Sástri, Pandit Haraprasád, M. A. <i>Calcutta.</i>
1888 Feb. 1.	R.	Sclater, William Lutley, Deputy Superintendent, Indian Museum. <i>Calcutta.</i>
1884 April 2.	N.R.	Scotland, John Parry, C. E., Ex. Engineer. <i>Midnapur.</i>

Date of Election.		
1874 July 1.	R.	Scully, Dr. John. <i>Calcutta.</i>
1888 Sept. 27.	R.	Sen, Gupta, Kali Prasanna. <i>Calcutta.</i>
1886 Mar. 3.	N.R.	Sen, Hirálal, Excise Department. <i>Gya.</i>
1885 April 1.	N.R.	Sen, Yadunáth. <i>Khurda, Puri.</i>
1885 April 1.	R.	Sen, Narendranáth. <i>Calcutta.</i>
1879 Jan. 8.	N.R.	Sewell, R., M. C. S. <i>Madras.</i>
1879 May 7.	A.	Sheridan, C. J., C. E. <i>Europe.</i>
1888 April 4.	N.R.	Shástri, Haridas Bhattáchárya, Sankhya Shastri, M. A. Director of Public Instruction, Jaypur State. <i>Jaypur.</i>
1882 May 3.	N.R.	Shyamadáś, Mahámahopadhyáya Kaviráj, Private Secy. to H. H. the Maharájā of Udaipur. <i>Udaipur.</i>
1878 April 3.	R.	Simson, A. <i>Calcutta.</i>
1887 April 6.	R.	Simpson, Dr. W. J., Health Officer to the Municipal Corporation. <i>Calcutta.</i>
1889 Nov. 6.	N.R.	Simpson, Edmund James, L. R. C. P. E., F. L. P. S. G., L. M. G. E., Civil Surgeon. <i>Rai Bareili.</i>
1884 Sept. 3.	R.	Singh, Kumár Indrachandra, of Paikparah. <i>Calcutta.</i>
1882 June 7.	N.R.	Singh, Maharájā Sir Harendra Kishore, K. C. I. E. <i>Bettiah.</i>
1890 Sept. 25.	R.	Singh, Kumar Sarat Chandra. <i>Calcutta.</i>
1878 Oct. 4.	N.R.	Singh, Rájá Lachman. <i>Agra.</i>
1882 Aug. 2.	N.R.	Singh, Narain, Rájá Rám. <i>Khyrah, Monghyr.</i>
1880 June 2.	N.R.	Singh, Thákur Garuradhawaya Prasád, Rájá of Beswan, Beswan Fort. <i>Aligarh.</i>
1890 Jan. 1.	N.R.	Singh, Thakur Soorj Bakhsh, Zemindar. <i>Sitapur, Oudh.</i>
1889 Aug. 29.	N.R.	Singh, H. H. Prabhunarain, Bahádur, Maharájā of Benares.
1889 Nov. 6.	N.R.	Singh, Hon. Rájá Rameshwara, Bahádur. <i>Darbhanga.</i>
1859 Aug. 3.	R.	Siñha, Baláichánd. <i>Calcutta.</i>
1872 Aug. 5.	N.R.	Skrefsrud, Rev. L. O., Indian Home Mission to the Santháls. <i>Rampur Hát.</i>
1885 Nov. 4.	A.	Smith, N. F. F. <i>England.</i>
1874 June 3.	N.R.	Smith, Vincent Arthur, C. S., Collector. <i>Mozuffarnaghar.</i>
1890 April 2.	A.	Solf, Dr. W. H., German Consulate General. <i>Europe.</i>
1872 July 3.	N.R.	Stephen, Carr, B. L. <i>Lahore.</i>
1876 Aug. 2.	N.R.	St. John, Lieut.-Col. Sir Oliver Beauchamp, R. E., K. C. S. I., Resident in Mysore and Chief Commissioner. <i>Coorg.</i>
1880 Nov. 3.	A.	Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Europe.</i>
1884 Mar. 5.	A.	Swinhoe, Lieut.-Col. C., B. S. C. <i>Europe.</i>
1864 Aug. 11.	R.	Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i>

Date of Election.		
1880 Nov. 3.	A.	Swynnerton, Rev. Charles. <i>England.</i>
1868 June 3.	R.	Tagore, The Hon. Maharájá Sir Jotendra Mohun, Bahádur, K. C. S. I. <i>Calcutta.</i>
1865 Sept. 6.	R.	Tawney, C. H., C. I. E., M. A., Principal, Presidency College. <i>Calcutta.</i>
1884 May 5.	N.R.	Taylor, W. C., Settlement Officer. <i>Khurda.</i>
1878 June 5.	N.R.	Temple, Capt. R. C., s. c. <i>Palace, Mandalay, Burma.</i>
1875 June 2.	N.R.	Thibaut, Dr. G., Professor, Muir Central College. <i>Allahabad.</i>
1886 Aug. 4.	R.	Thomas, Robert Edmond Skyring. <i>Calcutta.</i>
1886 Jan. 6.	A.	Thompson, Colonel, W. B., B. S. C. <i>Europe.</i>
1847 June 2.	L.M.	Thuillier, Major-Genl. Sir Henry Edward Landor, R. A., C. S. I., F. R. S. <i>Europe.</i>
1889 Mar. 6.	R.	Thuillier, Colonel. H. R., R. E., Surveyor General of India. <i>Calcutta.</i>
1871 April 5.	F.M.	Treffitz, Oscar. <i>Europe.</i>
1861 June 5.	L.M.	Tremlett, James Dyer, M. A., c. s., Judge, Chief Court. <i>Lahore.</i>
1890 Feb. 5.	N.R.	Venis, Arthur, M. A., Former Boden Sanskrit scholar, Oxford, Principal, Sanskrit College, Benares. Professor, Queen's College. <i>Benares.</i>
1885 May 6.	R.	Verdeau, Ivan. <i>Calcutta.</i>
1886 Sep. 30.	N.R.	Waddell, Dr. Laurence Austine, M. B., Superintendent of Vaccination. <i>Darjeeling.</i>
1889 Nov. 6.	R.	Walsh, J. H. Tull, Indian Medical Service. General Hospital. <i>Calcutta.</i>
1865 May 3.	R.	Waterhouse, Col. James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta.</i>
1887 Oct. 6.	N.R.	Watson, Lieut. Edward Yerbury, Deputy Assistant Commissary General. <i>Burma.</i>
1874 July 1.	N.R.	Watt, Dr. George, C. I. E., Reporter on Economic Products. <i>Simla.</i>
1869 Sept. 1.	A.	Westland, Hon. James, c. s. <i>Europe.</i>
1880 Feb. 4.	R.	Wilson, The Hon. Arthur, Judge High Court. <i>Calcutta.</i>
1870 Jan. 5.	R.	Wood-Mason, James. Superintendent, Indian Museum. <i>Calcutta.</i>
1873 Aug. 6.	N.R.	Woodthorpe, Col. Robert Gossett, C. B., R. E., Deputy Quarter-Master-General. <i>Simla.</i>

SPECIAL HONORARY CENTENARY MEMBERS.

Date of Election.	
1884 Jan. 15.	Dr. Ernst Haeckel, Professor in the University of <i>Jena</i> .
1884 Jan. 15.	Charles Meldrum, Esq., M. A., F. R. S. <i>Mauritius</i> .
1884 Jan. 15.	A. H. Sayce, Esq., Professor of Comp. Philology. <i>Oxford</i> .
1884 Jan. 15.	M. Emile Senart, Member of the Institute of France. <i>Paris</i> .
1884 Jan. 15.	Sir Monier Monier-Williams, <i>Knt.</i> , K. C. I. E., C. I. E., M. A., D. C. L., LL. D., Boden Prof. of Sanskrit. <i>Oxford</i> .

HONORARY MEMBERS.

1848 Feb. 2.	Sir J. D. Hooker, K. C. S. I., C. B., M. D., D. C. L., F. R. S., F. G. S. <i>Kew</i> .
1853 April 6.	Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S., <i>London</i> .
1858 July 6.	B. H. Hodgson. <i>Europe</i> .
1860 Mar. 7.	Professor Max Müller. <i>Oxford</i> .
1860 Nov. 7.	Dr. Aloys Sprenger. <i>Heidelberg</i> .
1860 Nov. 7.	Dr. Albrecht Weber. <i>Berlin</i> .
1868 Feb. 5.	Major-General Sir A. Cunningham, R. E., K. C. I. E., C. S. I., C. I. E. <i>Europe</i> .
1872 May 1.	Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London</i> .
1872 June 5.	Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S., F. L. S. <i>London</i> .
1875 Nov. 3.	Dr. O. Böhtlingk. <i>Leipzig</i> .
1875 Nov. 3.	Prof. J. O. Westwood. <i>Oxford</i> .
1876 April 5.	Dr. Warner Siemens. <i>Berlin</i> .
1879 June 4.	Prof. E. B. Cowell, D. C. L. <i>Cambridge</i> .
1879 June 4.	Dr. A. Günther, V. P. R. S. <i>London</i> .
1879 June 4.	Dr. J. Janssen. <i>Paris</i> .
1879 June 4.	Prof. H. Milne-Edwards. <i>Paris</i> .
1879 June 4.	Prof. P. Regnaud. <i>Lyons</i> .
1879 June 4.	E. Renan. <i>Paris</i> .
1881 Dec. 7.	Professor Hermann L. E. Helmholtz. <i>Berlin</i> .
1881 Dec. 7.	Dr. Rudolph v. Roth. <i>Tübingen</i> .
1881 Dec. 7.	Sir William Thompson, <i>Knt.</i> , LL. D., F. R. S., F. R. S. E., <i>Glasgow</i> .
1883 Feb. 7.	W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. R. G. S., F. Z. S. <i>London</i> .
1883 Feb. 7.	Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Parkstone</i> , <i>Dorsetshire</i> .
1883 Feb. 7.	Prof. William Dwight Whitney. <i>Newhaven, Connecticut</i> , U. S. A.

CORRESPONDING MEMBERS.

Date of Election.		
1844 Oct.	2.	Macgowan, Dr. J. <i>Europe.</i>
1856 July	2.	Krämer, A. von. <i>Alexandria.</i>
1856 „	2.	Porter, Rev. J. <i>Belfast.</i>
1860 Feb.	1.	Baker, The Rev. H. <i>E. Malabar.</i>
1861 July	3.	Gösche, Dr. R. <i>Berlin.</i>
1862 Mar.	3.	Murray, A., Esq. <i>London.</i>
1866 May	7.	Schlagintweit, Prof. E. von. <i>Berlin.</i>

ASSOCIATE MEMBERS.

1874 April	1.	Lafont, Rev. Fr. E., s. J., c. i. e. <i>Calcutta.</i>
1875 Dec.	1.	Bate, Rev. J. D. <i>Allahabad.</i>
1875 „	1.	Maulavi Abdul Hai, Madrasah. <i>Calcutta.</i>
1882 June	7.	Giles, Herbert, Esq. <i>Europe.</i>
1883 Feb.	7.	Rodgers, C. J. <i>Amritsar.</i>
1884 Aug.	6.	Moore, F., F. R. S., F. L. S. <i>London.</i>
1885 Dec.	2.	Führer, Dr. A. <i>Lucknow.</i>
1886 Dec.	1.	Bábú Saratchandra Dás, c. i. e. <i>Darjeeling.</i>

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA THREE YEARS AND UPWARDS.*

* *Rule 40.*—After the lapse of 3 years from the date of a member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the List of Members.

The following members will be removed from the next member list of the Society under the operation of the above Rule :

A. C. Carlyle, Esq.
H. B. Medlicott, Esq.
E. M. Sage, Esq.
C. J. Sheridan, Esq.
Colonel W. B. Thompson, B. s. c.
Hon. J. Westland, c. s.

LOSS OF MEMBERS DURING 1890.

BY RETIREMENT.

A. F. M. Abdur Rahmán.
 H. H. Anderson, Esq.
 Rev. A. W. Atkinson.
 R. R. Bayne, B. A., M. R. I.
 I. C. Bose.
 J. W. Chambers, Esq.
 Sir J. W. Edgar, K. C. I. E., C. S. I., B. C. S.
 Káliprasanna Ghosha.
 Rev. J. M. Hamilton.
 A. Macdonald, Esq.
 J. W. Parry, Esq., C. E.
 Lieut. E. W. Petley, E. N., F. R. C. S.
 T. A. Pope, Esq.
 Lieut.-Col. A. C. Toker, C. B.

BY DEATH.

Ordinary Members.

E. F. T. Atkinson, Esq., C. I. E.
 Kumár Isvariprasad Garga.
 Alexander Grant, Esq., M. I. C. E.
 S. A. Hill, Esq., B. SC., A. R. S. M., F. C. S.
 Nanda Kumár Roy.

Honorary Member.

Professor Bápu Deva Sástri.

BY REMOVAL.

Under Rule 40.

Dr. J. E. T. Aitchison, C. I. E.
 J. Barnett, Esq.
 H. C. Barstow, Esq., C. S.
 Sir C. E. Barnard, K. C. S. I., C. S.
 T. F. Bignold, Esq.
 Hon. Sir R. E. Egerton, K. C. S. I., C. I. E., C. S.
 Sir Lepel H. Griffin, K. C. S. I., C. S.
 Major W. G. Hughes, M. S. C.

[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1890.

STATEMENT

Asiatic Society

Dr.

To ESTABLISHMENT.

Salaries	..	...	...	Rs.	4,356	6	11
Commission	..	...	...	...	405	15	8
					<u>4,762</u>	<u>6</u>	<u>7</u>

To CONTINGENCIES.

Stationery	...	...	...	...	86	14	0
Lighting	...	...	...	...	48	0	0
Building	...	...	...	...	193	5	9
Taxes	...	...	...	...	819	0	0
Postage	...	...	...	...	625	0	3
Freight	...	...	...	...	10	0	0
Meeting	...	...	...	...	91	12	0
Miscellaneous	...	...	...	...	192	10	3
					<u>2,066</u>	<u>10</u>	<u>3</u>

To LIBRARY AND COLLECTIONS.

Books	...	...	...	...	1,889	3	5
Local Periodicals	...	...	...	...	31	0	0
Binding	...	...	...	...	435	9	6
Coins	...	...	...	...	1	8	0
Purchase of Copper plates	...	...	...	...	35	0	0
Catalogue of Tibetan MSS.	...	...	...	...	66	4	0
					<u>2,458</u>	<u>8</u>	<u>11</u>

To PUBLICATIONS.

Journal, Part I	...	...	...	...	3,205	12	7
Journal, Part II	...	...	...	...	6,364	4	3
Proceedings	2,052	15	6
					<u>11,623</u>	<u>0</u>	<u>4</u>

To Printing charges of Circulars, Receipt-forms, &c.	<u>222</u>	<u>10</u>	<u>0</u>
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To Personal Account (Writes off and Miscellaneous)	21,133	4	1
		610	12	0

To EXTRAORDINARY EXPENDITURE.

Auditor's fee	...	...	...	...	100	0	0			
Barisál Guns	...	...	...	...	6	0	0	106	0	0
			To Balance	...	.....			137,611	14	10
					Total Rs.	...	159,461	14	11	

NO. 1.

of Bengal.

Cr.

By Balance from last report ... Rs. 139,211 13 7

BY CASH RECEIPTS.

Publications sold for cash	...	Rs	396 15 11
Interest on Investments	...	...	9,469 9 2
Rent of two rooms on the ground floor of the Society's premises	...	...	300 0 0
Advances recovered	...	...	3 14 6
Miscellaneous	...	...	57 5 9
			<u>10,227 13 4</u>

BY PERSONAL ACCOUNT.

Admission Fees	...	...	736 0 0
Subscriptions	...	...	8,109 0 0
Sales on credit	...	...	995 14 0
Miscellaneous	...	...	181 6 0
			<u>10,022 4 0</u>

Total Income ... 20,250 1 4

Total Rs. ... 159,461 14 11

WILL. KING,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Examined and found correct.

MEUGENS & KING,

Public Accountants,

The 20th March, 1891.

STATEMENT

Oriental Publication Fund in Account

Dr.

To CASH EXPENDITURE.

Printing charges ...	...	...	Rs.	8,699	13	6
Editing charges ...	...	...	...	3,613	8	0
Binding ...	...	...	...	7	0	0
Salaries ...	...	...	...	1,766	0	0
Advertising ...	...	...	...	90	0	0
Freight ...	...	...	...	15	0	0
Stationery ...	...	...	...	54	1	0
Copying ...	...	...	...	25	0	0
Postage ...	...	...	...	819	13	6
Purchase of MSS. ...	...	...	...	22	0	0
Contingencies ...	...	...	...	65	11	1
Commission on collecting bills	...	...	...	56	15	11

15,234 15 0

To PERSONAL ACCOUNT (Writes off and Miscellaneous)

5 4 0

		Total Expenditure	.....	15,240	3	0
To Balance	...	...	.....	469	2	9
		Total Rs.	...	15,709	5	9

NO. 2.

with the Asiatic Society of Bengal.

Cr.

Balance from last report	Rs.	3,695	7	6
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BY CASH RECEIPTS.

Government allowance	Rs.	9,000	0	0
Publications sold for cash	711	8	0
Advances recovered	...	...	...	85	15	0
				<u>9,797</u>	<u>7</u>	<u>0</u>

BY PERSONAL ACCOUNT.

Sales on credit	2,216	7	3
				<u>2,216</u>	<u>7</u>	<u>3</u>

Total Income	12,013	14	3
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Total Rs.	...	<u>15,709</u>	<u>5</u>	<u>9</u>
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WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

STATEMENT

Sanskrit Manuscript Fund in Account

Dr.

To CASH EXPENDITURE.

Salaries	...	...	Rs.	1,387	15	0	
Travelling expenses	...	...	...	10	0	0	
Commission	...	...	...	0	10	0	
Printing charges	...	...	...	388	12	0	
Postage	...	...	...	28	8	9	
Contingencies	...	...	...	54	11	9	
Stationery	...	...	...	5	0	0	
Purchase of MSS.	500	4	6	
Freight	2	0	0	
							<u>2,377 14 0</u>
To Balance					4,214 2 3

Total Rs.	...	<u>6,592 0 3</u>
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NO. 3.

with the Asiatic Society of Bengal.

Cr.

Balance from last report	Rs.	3,300	0	3
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BY CASH RECEIPTS.

Government allowance	Rs.	3,200	0	0
				<hr/>		
				3,200	0	0
				<hr/>		

BY PERSONAL ACCOUNT.

Sales on credit	92	0	0
				<hr/>		
				92	0	0
				<hr/>		

Total Income	3,292	0	0
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Total Rs.	...	6,592	0	3
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WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

STATEMENT

Personal

Dr.

To Balance from last report	Rs.	4,687	4	8
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To CASH EXPENDITURE.

Advances for purchase of Sanskrit MSS., &c.			4,936	4	4
To Asiatic Society	10,022	4	0		
To Oriental Publication Fund	2,216	7	3		
To Sanskrit MSS. Fund	92	0	0		
						12,330	11 3

Total Rs. ...					21,954	4	3
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NO. 4.

Account.

Cr.

By Cash receipts	Rs.	18,520	3	3
By Asiatic Society	610	12	0
By Oriental Publication Fund	5	4	0
						<u>19,136 3 3</u>

By Balances.		Due to the Society.			Due by the Society.		
Members ...	...	5,167	12	7	194	12	10
Subscribers	...	251	1	0	73	7	0
Employés ...	...	30	0	0	250	0	0
Agents ...	...	269	2	6	2,269	15	10
Miscellaneous	...	253	6	10	365	2	3
		<u>5,971</u>	<u>6</u>	<u>11</u>	<u>3,153</u>	<u>5</u>	<u>11</u>

2,818 1 0

21,954 4 3

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Benga .*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

STATEMENT

Invest

Dr.

			Nominal.			Actual.		
To Balance from last report ...	...		Rs. 141,300	0	0	141,015	1	7
To Cash ...	...	...	...	.....		7	11	8
Total Rs. ...	...	141,300	0	0	141,022	13	3	

*Funds.	Actual.						Total.		
	Permanent.			Temporary.					
Asiatic Society ...	135,400	0	0	.....	...	...	135,400	0	0
Sanskrit MSS. ...	.....	...	...	1,943	5	3	1,943	5	3
Trust Fund ...	1,200	0	0	.....	...	...	1,200	0	0
	136,600	0	0	1,943	5	3	138,543	5	3

STATEMENT

Trust

Dr.

To Balance (Servants Pension Fund) ...	...	.....	Rs. 1,261	3	10
Total Rs. ...	...	1,261	3	10	

NO. 5.

ments.

Cr.

					Nominal.		Actual.	
By Cash	...	...	...	Rs.	2,400	0 0	2,479	8 0
By Balance*	...	...	...	...	138,900	0 0	138,543	5 3
Total Rs.					...	141,300	0 0	141,022 13 3

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS KING,

*Public Accountants,**The 20th March, 1891.*

NO. 6.

Fund.

Cr.

By Balance from last report	...	...	.....	Rs.	1,207	3 10
By interest on Investments	...	...	.....		54	0 0
Total Rs.					...	1,261 3 10

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

STATEMENT

Cash.

Dr.				
To Balance from last report	...	...	...	Rs. 1,712 2 11
RECEIPTS.				
To Asiatic Society	...	...	...	10,227 13 4
To Oriental Publication Fund	...	...	...	9,797 7 0
To Sanskrit Manuscript Fund	...	...	...	3,200 0 0
To Personal Account	...	...	...	18,520 3 3
To Investment	...	...	...	2,479 8 0
To Trust Fund	...	...	...	54 0 0
Total Rs.	...	...	...	45,991 2 6

STATEMENT

Balance

Dr.				
To Cash	...	...	...	Rs. 2,195 1 5
To Investment	...	...	...	138,543 5 3
To Personal Account	...	...	...	2,818 1 0
Total Rs.	...	...	...	143,556 7 8

NO. 7.

Account.

					Cr.		
					EXPENDITURE.		
By Asiatic Society	...	...	...	...	Rs.	21,239	4 1
By Oriental Publication Fund	...	...	...	...	...	15,234	15 0
By Sanskrit Manuscript Fund	...	...	...	...	...	2,377	14 0
By Personal Account	...	...	...	...	...	4,936	4 4
By Investment	...	...	...	...	...	7	11 8
By Balance	...	...	...	...	...	2,195	1 5
					Total Rs.	...	45,991 2 6

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

NO. 8.

Sheet.

					Cr.		
By Asiatic Society	...	...	...	...	Rs.	137,611	14 10
By Oriental Publication Fund	...	...	...	...	...	469	2 9
By Sanskrit Manuscript Fund	...	...	...	...	...	4,214	2 3
By Trust Fund	...	...	...	...	...	1,261	3 10
					Total Rs.	...	143,556 7 8

WILL. KING,

*Honorary Secretary and Treasurer,**Asiatic Society of Bengal.*

Examined and found correct.

MEUGENS & KING,

*Public Accountants,**The 20th March, 1891.*

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

FOR JANUARY, 1891.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 7th January 1891, at 9 P. M.

H. BEVERIDGE, Esq., C. S., President, in the chair.

The following members were present :—

Bábu Nobin Chandra Burál, Bábu Gaurdás Bysack, Bábu Saratchandra Dás, P. Donaldson, Esq., Maulví Golám Sarwar, Bábu Jogen-drachandra Ghose, Bábu Rajanikánta Gupta, F. G. Hickson, Esq., Dr. W. King, C. J. Lyall, Esq., R. D. Mehta, Esq., Bábu Asutosh Mukhopádhyaý, T. R. Munro, Esq., A. Pedler, Esq., Dr. D. Prain, W. L. Selater, Esq., Pandit Haraprasád Shástri.

The Minutes of the last meeting were read and confirmed.

Forty presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting :

Hon. Lala Bunbehari Kuppur, Manager, Burdwan Raj, proposed by H. Beveridge, Esq., seconded by Asutosh Mukerjee.

Duncan J. Macpherson, Esq., C. S., proposed by Babu Haraprasád Shástri, seconded by Dr. Crombie.

The following gentlemen have expressed their wish to withdraw from the Society :

F. S. Growse, Esq., C. S.

A. O. Hume, Esq., C. S.

The PRESIDENT announced that Lieut. Petley had kindly presented to the Society the old gun containing an inscription recently dug up at False Point, a description of which was published in the Proceedings for May 1890, together with the carriage on which it has been recently mounted. The gun has been placed in the Society's grounds on the west side of the building.

The SECRETARY read a letter from the Government of Bengal conveying approval to the manner in which the Government grants-in-aid of the Oriental Publication Fund, and the Sanskrit Manuscript Fund were applied during the year 1889.

The PRESIDENT read a translation of a Sanad said to have been granted by Akbar to Heer Bijoy Suri, an Acharj of the Jains, for Girnar, Mount Abu, Parisnath, &c. It was dated 7th Ardi Bihisht or Rabi-al-awal of the 37th year of the reign (1593). The President said that he offered no opinion about the genuineness of the document, but it certainly was in Akbar's style, as recorded by Abul Fazl. The Sanad has been produced in the case about Parisnath which is now pending on appeal before the High Court. It is said to have been first produced about 1867. The President had thought it right to notice the document because, if genuine, it was a very interesting one, and it might be lost sight of if not now referred to. Professor Bühler's paper in the *Epigraphia Indica*, Part VI, p. 321, shows Akbar's inclination towards Jainism. He is there said to have granted a firman to Jinachandra Súri.

The PRESIDENT exhibited rubbings of an inscription of Ghiyásu-d-dín Balban (A. H. 664—686, A. D. 1265—1237). The inscription,* which consists of four lines in relief, originally stood over the gateway of a dismantled fort at Manglaur in the Saharanpur district, N.-W. P., and is now placed in the Khángáh of Makhdúm Sháh Wiláyat at the same place. Manglaur is the chief town of the pargana of the same name, distant 6 miles due south from Rurki, and 16 miles south-east from Saharanpur. It is chiefly inhabited by Muhammadan *juláhas* (weavers), and is a poor place, having suffered much from fever since the water-level of the country was raised by the Ganges Canal. An imperfect copy of the inscription was sent by Mr. W. Irvine, C. S., Magistrate of the District, in February 1887, and the rubbings now produced were subsequently obtained by Dr. Hoernle.

The inscription is imperfect, and therefore difficult to read and

* This account has been kindly drawn up by Mr. C. J. Lyall, C. I. E.

translate. The initial portion of each of the four lines, which no doubt occupied a slab to the right, is wanting, and something also appears deficient at the end of the third line. The following is the text :

الش [هنشاه الاعظم غياث الدنيا و الدين ابوالمظفر
له وسلطانه في نوبة ايلة ملك ملوك الشرق والصين
دفاع دام علوه امر هذه العمارة الامين السهتساة
ح العاشر من شهر الله الاصم رجب سنة ثلث وثمانين وستمائة

(1.) "The mighty Shahansháh Ghiyāṣu-d-dunyá wa-d-dín, father of the Victorious

(2.) [May God perpetuate his glory] and his rule : in the time of the governorship of the King of the Kings of the East and China

(3.) * * * (May his lofty dignity be eternal !) the Shahansháh gave the order for (the erection of) this secure building

(4.) On the tenth of the silent month of God, Rajab, in the year 683."

Only two other inscriptions of Balban have yet been described. One is on the walls of the Jámí' Masjid at Garhmuktesar in the Merāṭh district, and is dated 682. Its text will be found at p. 126 of Mr. E. Thomas's "Pathán Kings of Delhi." In it the king is styled

السلطان الاعظم شانشاه (read السهتساة) المعظم غياث الدنيا و الدين ابوالمظفر بلبن
السلطان ناصر امير المؤمنين

The other is the inscription on the Minár of Koil (now preserved in the Aligarh Institute, N.-W. P.) of which a facsimile and reading are given at p. 129 of the same work. The translation of a more correct reading, furnished by Mr. Blochmann, will be found at p. 486 of the late Mr. E. T. Atkinson's Statistical Account of the Aligarh District (Vol. II of his "Statistical, Descriptive and Historical Account of the N.-W. Provinces of India.") The latter, which is dated 10th Rajab 652, was set up during the reign of the preceding king, Nāṣiru-d-dín Mahmúd, whose minister and brother-in-law Balban was. The Aligarh inscription also contains the curious expression, applied therein to Balban though he was then only the king's deputy (Náibu-s-saltānah), "*maliku mulúki-sh-sharqi wa-ṣ-Šín*"—"King of the kings of the East and of China"—which occurs in the second line of the Manglaur inscription.* In the latter it probably also refers, as is indicated by the words *في نوبة ايلة*,

* This expression is used by the Arabic historians and geographers with reference to Alexander's conquests in Asia ; see, e. g., Kāzviní's geography (ed. Wüstenfeld) s. v. Herát. It amounts, therefore, in an inscription like the present, to a description of the person named as "the Alexander of his age."

to a Deputy, not the king himself—perhaps to his much-loved eldest son Muhammad Sultán, called Khán-i-Shahíd, who fell fighting against the Mughals at Lahor in the following year 684. This prince was Governor of Multán during the later years of his life, but exercised authority over the whole of the western portion of the Empire during Balban's absence in Bengal in the operations against Tughrul Khán.

The word of which a fragment occurs at the beginning of the second line may be either *جالة* or *ملكه*. The commencement of the third line is not legible without a knowledge of what comes before. The group of letters may be *دص فادام* instead of as printed above. The construction of the *امر* is faulty; we should expect *امر ببناء هذ* or *امر بهذه* - *الامين* is perhaps a mistake of the stone-cutter for *الامير*, but the dot of the *ن* is clear. *امين*, as a participial adjective with a passive signification of the form *فعليل*, may be appended in the masculine form to a feminine noun. The word *الشه نشاز* is doubtful. The *ز*, which is placed above the second *س*, looks more like *لا*, which, however, gives no sense. Neither of the *س*s is pointed, and the *ن* seems to be written before instead of after the first *ه*. The word of which there is a fragment at the beginning of the fourth line is probably *النار يخ*, only *ع* being visible. The name *لاصم*, "the deaf and dumb," given to the sacred month of Rajab is an old epithet of Arabian paganism, indicating that in that month (which stands by itself alone in the midst of the Arabian year, the other three sacred months being consecutive) the noise of battle is never heard.

The alterations in the Rules which had been proposed by Council were brought up for discussion. A letter from Rájá Rájendralála Mitra strongly objecting to the alterations was read, and then remarks were made by several members. Dr. W. King supported Rájá Rájendralála Mitra's objections, and Messrs. Mehta and Donaldson and Bábus Asutosh Mukharjia, Gaurdás Bysack, Jogendrachunder Ghose, Rajinikánta Gupta and Nobin Chundra Burál spoke against the proposals to increase the subscriptions and to substitute annual for quarterly payments. Messrs. Munro, Sclater and Pedler approved of the proposal to increase the subscriptions. The alterations were then put to the vote, one by one, with the following result:

		<i>For.</i>	<i>Against</i>	<i>Result.</i>
I.	Alteration of Rule 2 (a)	1	All other present	Rejected.
II.	do. Rule 14 (c)	5	6	Rejected.
III.	do. Rule 16	3	7	Rejected.

			<i>For.</i>	<i>Against.</i>	<i>Result.</i>
IV.	do.	Rule 17	4	8	Rejected.
V.	do.	Rules 18, 19, 22			Rejected.
VI.	do.	Rule 24	Unanimously agreed to.		Carried.
VII.	do.	Rule 25	do.		do.
VIII.	do.	Rule 28	do.		do.
IX.	do.	Rules 32 and 35			Rejected.
X.	do.	Rule 37	First alteration rejected, second alteration whereby six months are altered into two months was carried.		
XI.	do.	Rules 38 and 39			Carried.
XII.	do.	Rules 20, 21, 26, 27, 29, 30, 31, 40			

The abolition of Rules 26 and 27 was carried.

The proposal to abolish Rules 21, 29, 31, 32 and 40 was rejected.

The President stated that the result of the voting would be reported to the Council who would consider what further steps should be taken.

The following papers were read :—

1. *On an inscription of the 7th Century A. D. relating to the reigning family of Meywar, found at Kundâ near Udaipur.* By MAHĀMAHOPĀDHYĀ KAVIRĀJA SHYAMALDĀS, M. R. A. S., F. R. H. S., (with an ink impression and photograph).

2. *Notes on some of the Muhammadan coins collected by the Afghan Boundary Commission, from an historical point of view.* By MAJOR H. G. RAVERTY. Communicated by H. BEVERIDGE, ESQ., C. S.

The papers will be published in the Journal, Part I.

3. *Description of a two Cowree piece, the lowest denomination of the Hindu system of Copper Coinage.*—By W. THEOBALD, ESQ. Communicated by DR. W. KING.

Among the coins dispersed lately in London, at the sale of the Da' Cunha collection was one, now in my possession, which goes far to prove the extreme minuteness of some of the copper coins, into which the unit of the whole system, the 'pana' was divided.

In the concluding chapter of General Sir A. Cunningham's 'Coins of Alexander's successors', page 18, a table is given of the subdivisions of the 'pana,' which I have reproduced, neglecting the trifling variations in weight to which copper coins are more subject than are coins of the less oxidizable metals.

In addition to the 'pana,' there are also recorded pieces of $1\frac{1}{4}$, $2\frac{1}{2}$, $3\frac{3}{4}$ and 5 panas in value, the last ranging as high as 720 grains.

The 'pana' was subdivided as follows:—

Pana or 20 ganda piece		=	80 courees	=	140 grains.
$\frac{1}{2}$	10 " "		40 "		70 "
$\frac{1}{4}$	5 " (or 'kákini')	=	20 "		35 "
$\frac{1}{8}$	$2\frac{1}{2}$ " ($\frac{1}{2}$ 'kákini')	=	10 "		17 5
$\frac{1}{10}$	2 " "		8 "		14
$\frac{1}{16}$	$1\frac{1}{4}$ " ($\frac{1}{4}$ 'kákini')	=	5 "		8 75
$\frac{1}{20}$	1 " "		4 "		7

In this table no smaller coin is mentioned than the twentieth part of a 'pana,' of 7 grains weight and the value of four cowrees, but in General Cunningham's paper on the coins of the Nine Nâgas, in the Journal of the Asiatic Society of Bengal for 1865, page 115, reference is made to a coin of $4\frac{1}{2}$ grains, but from the context it would appear to be a worn specimen, as it is regarded as a quarter 'kákini,' the mean weight of which is taken as 7 grains. These quarter 'kákinis' are, it may be well to remember, round coins, whose weight, especially in the smaller denominations, is less easy to adjust with accuracy, than in the case of square coins, and whose value is too trivial to render such accuracy important.

The coin now under consideration is square, quite unworn and in excellent preservation, and weighs 4·5. It is symmetrically shaped, and each side measures 0·25 of an inch. From its weight I was at first inclined to regard it as the eighth part of a kákini or the equivalent of $2\frac{1}{2}$ courees, but Sir Alexander Cunningham, whom I consulted, is of opinion, it is rather the fortieth part of a 'pana' or two couree piece 'that division being more likely than one involving the fractional part of a couree. The highest weight of the pana is 144 grains, so that the calculated weight of $\frac{1}{40}$ of a pana should be no more than grains 3·6 which makes the piece under consideration not quite one grain in excess, but as before remarked, in such minute pieces exactness can hardly be looked for, and the present piece is in exceptional preservation. Four pieces in Sir Alexander's cabinet from Eran weigh no more than 12 grains, ranging between 2·75 to 3·75 grains, so that it may fairly be concluded, that a two couree piece of the ideal weight of 3·6 grains was a recognised issue of the Eran and Ujain mints. The obverse displays part of two circles, which in all probability constitute a portion of the symbol of Ujain, sometimes called the 'four-balled chakra', consisting of four circles usually united by a cross. There is also a circle, or wheel, surmounted by two 'chattras' a symbol analo-

gous to the 'broad arrow' of the present day, and it does not seem that more were ever represented on the 'die' though three and seven of these 'broad arrow's or 'chattras' are more commonly represented on this symbol on the punch-marked coins, which were the prototypes of the later issues of Ujain. There is yet another symbol of two semi-circles, symmetrically united by their convex surfaces, but whether this is but a portion, owing to want of space on the die, of the common symbol of a 'chaitya' surmounted by a crescent, which is so common on punch-marked coins, or a symbol complete in itself, is not easy to say. These symbols stand out in fair relief, and the 'die' was evidently proportioned to the size of the coin. The square shape of the coin is a proof that its weight was intentionally fixed, as the weight would, it is clear, depend on the width of the 'ribbon' of copper, from which the blanks were cut, for the coin is a die struck coin, and not cast in a mould like so many of the early Buddhist coins. The reverse is blank, which seems to point to its being an early issue, after the fashion of the Elephant and Lion coins of Taxila.

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### LIBRARY.

The following additions have been made to the Library since the meeting held in December last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Amsterdam. Der Koninklijke Akademie van Wetenschappen,—Jaarboek, 1889.

———. ————. Verslagen en Mededeelingen, Afdeling Letterkunde. Deel VI.

———. ————. ————. Afdeling Natuurkunde, Deel VI—VII.

Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 83.

Birmingham. Birmingham Philosophical Society,—Proceedings, Vol. VII, Part 1.

Bombay. The Indian Antiquary,—Vol. XIX, Parts 240—241.

Brussels. La Société Royale Malacologique de Belgique,—Annales, Tome XXIV.

———. ————. Procès Verbal, 3 Août-7 Décembre 1889.

———. ————. Procès-Verbaux des Séances, 4 Janvier—2 Août 1890.



- Calcutta. Indian Engineering,—Vol. VIII, Nos. 23—26, Vol. IX, No. 1 and Index to Vol. VII.
- . Photographic Society of India,—Journal, Vol. III, No. 12 and Vol. IV, No. 1.
- Dresden. Gesellschaft Iris zu Dresden,—Deutsche Entomologische Zeitschrift, Jahrgang 1889-90, Zweites Lepidopterologisches Heft, Band III, No. 1.
- Edinburgh. The Scottish Geographical Society,—Magazine, Vol. VI, Nos. 9—10.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Septembre—Octobre 1890.
- Jassy. Societății Științifice și Literare din Iași,—Arhiva, An. II, Nos. 1—2. Julie, August 1890.
- London. Institution of Civil Engineers,—Minutes of Proceedings, Vol. CII and Brief Subject Index, Vols. LIX to CII.
- . Institution of Mechanical Engineers,—Proceedings, No. 2, 1890.
- . Nature,—Vol. XLIII, Nos. 1099—1102.
- . Royal Geographical Society,—Proceedings, Vol. IX, Nos. 9 and 10.
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR FEBRUARY, 1891.

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The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th February 1891, at 9 P. M.

H. BEVERIDGE, Esq., C. S., President, in the Chair.

The following members were present :

Bábú Nobinchánd Burál, W. Connan, Esq., Hon. Sir A. W. Croft, Dr. D. D. Cunningham, Bábú Saratchandra Dás, Most Rev. Dr. Paul Goethals, Bábú Rajanikánta Gupta, Colonel H. S. Jarrett, Dr. W. King, Rev. Father E. Lafont, C. Little, Esq., C. J. Lyall, Esq., Kumár Rameswár Maliáh, Bábú Asutosh Mukopádhyáy, L. de Nicéville, Esq., J. D. Nimmo, Esq., M. H. Oung, Esq., Hon. Dr. Mahendralál Sarkár, W. L. Selater, Esq., Pandit Haraprasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, Colonel J. Waterhouse, J. Wood-Mason, Esq.

According to the Bye-Laws of the Society, the President ordered the Voting papers to be distributed for the election of Office-Bearers and Members of Council for 1891, and appointed Messrs. de Nicéville and Donaldson to be Scrutineers.

The PRESIDENT then called upon the Secretary to read the Annual Report.

ANNUAL REPORT FOR 1890.

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The Council of the Asiatic Society have the honor to submit the following report on the state and progress of the Society's affairs during the past year.

### Member List.

During the year under review 23 Ordinary Members were elected, 14 withdrew, 5 died, and 8 were removed from the list under Rule 40, being more than 3 years absent from India; of the 23 Members elected 3 were old Members who rejoined. The total number of Members at the close of 1890 was thus 303 against 307 at the end of the preceding year; of these 105 were Resident, 142 Non-Resident, 10 Foreign, 21 Life, 23 absent from India and 2 special Non-Subscribing Members, as will be seen from the following table, which also shows the fluctuations in the number of Ordinary Members during the past six years.

| Year. | Paying.   |               |          |        | Non-Paying. |         |                          |        | Grand Total. |
|-------|-----------|---------------|----------|--------|-------------|---------|--------------------------|--------|--------------|
|       | Resident. | Non-Resident. | Foreign. | Total. | Life.       | Absent. | Special Non-Subscribing. | Total. |              |
| 1885  | 105       | 161           | 13       | 279    | 16          | 34      | 1                        | 51     | 320          |
| 1886  | 93        | 142           | 18       | 253    | 16          | 48      | 2                        | 66     | 319          |
| 1887  | 98        | 137           | 15       | 250    | 17          | 44      | 2                        | 63     | 313          |
| 1888  | 98        | 136           | 15       | 249    | 20          | 34      | 2                        | 56     | 305          |
| 1889  | 108       | 135           | 13       | 256    | 22          | 27      | 2                        | 51     | 307          |
| 1890  | 105       | 140           | 10       | 255    | 21          | 25      | 2                        | 48     | 303          |

The five Ordinary Members the loss of whom by death during the year we have to regret, were Kumár Isvariprasád Garga, Dr. N. K. Roy, Mr. Alexander Grant (Life Member), Mr. E. F. T. Atkinson, and Mr. S. A. Hill.

There were no deaths amongst the Special Honorary Centenary Members, and only one amongst the Honorary Members; *viz.*, Professor Bápu Deva Sástri, C. I. E., of Benares. Their numbers now stand at 5 and 24 respectively; being one below the normal strength.

The Corresponding Members and Associate Members remain at 7 and 8 respectively, as last year, there having been no casualties.

No Members compounded for their subscription during the year.

### Indian Museum.

No presentations were made over to the Indian Museum.

There was only one change amongst the Trustees, caused by the resignation of Mr. E. Gay in consequence of leaving India, Mr. H. Beveridge was appointed to fill the vacant place.

The other Trustees on behalf of the Society were—

Dr. A. F. R. Hoernle.

A. Pedler, Esq.

Dr. D. D. Cunningham.

C. Little, Esq.

#### Finance.

The accounts of the Society are shown in Statement No. 1 in the appendix under the usual heads.

Statement No. 8 contains the Balance Sheet of the Society, and of the different funds administered through it.

The Budget Estimate for 1890 was taken at the following figures—  
Receipts Rs. 13,900, Expenditure Rs. 13,840. The actual results were, Receipts Rs. 18,758 and Expenditure Rs. 21,239.

The increase in Receipts is under the heads of Subscriptions, Sales of Publications, and Interest. *Subscriptions* were estimated at Rs. 7,340, whilst the actuals were Rs. 7,740, the excess being due to the Government Subscription to the Society's publications having been realized for the two years 1889 and 1890. *Sales of Publications* show an increase of Rs. 867, owing to receipts from the sale of the extra number of the Journal, Part I, containing Mr. Grierson's "Modern Vernacular Literature of Hindustan." This was expected when the estimate was prepared, as explained in the Report for last year, but no change was made in the estimate, it not being possible to anticipate what the amount might be. *Interest on Investments* was estimated at Rs. 6,100, the actuals have been Rs. 9,349. The large increase of Rs. 3,249 has arisen from the transfer in July last of Rs. 1,20,000 of the "Permanent Reserve Fund" from the  $4\frac{1}{2}$  per cent. to the 4 per cent. loan, the Government having paid in advance the excess interest of  $\frac{1}{2}$  per cent. to September 1893 (when the loan matures), to induce holders to make the transfer; and to interest for three months having been received at 4 per cent. the payments of interest now falling due in the months of June and December, whereas under the former loan they were due in March and September.

There is also a new receipt of Rs. 300 from the Photographic Society for rent of the two rooms they occupy in the Society's building.

The expenditure has exceeded the estimate by the large sum of Rs. 7,399, of which Rs. 6,723 is on account of the Journal and Proceedings. This is due partly to the payment of Rs. 1,402 for printing Mr. Grierson's book on the "Modern Vernacular Literature of Hindustan," forming an extra number to the Journal, Part I for 1888, and partly to excess payment of Rs. 4,100 on account of the Journal, Part II, caused by the adjustment of £177 for plates charged in Trübner's account for

1888, which only came to hand in December last, and to larger payments for printing, owing to some of the Baptist Mission Press bills for 1889 not having been paid in that year. The Proceedings also show an increase of Rs. 1,150 from the same cause.

The actual expenditure on the Journal and Proceedings was as follows :—

|                       |   |             |        |
|-----------------------|---|-------------|--------|
| <i>Journal</i>        | { | Part I.—Rs. | 3,206  |
|                       |   | Part II.— „ | 6,364  |
| <i>Proceedings.</i> — |   | „           | 2,053  |
| Total Rs.             |   |             | 11,623 |

against a budget provision of Rs. 4,900. There is still a sum of £48 due to Messrs. Trübner for plates for Part II supplied in 1889, which will be adjusted on receipt of their accounts for that year.

The other items of increase are of small amount, being Rs. 279 for Books. Rs. 193 for carrying out alterations in the drainage under a notice from the Municipality. Rs. 122 for printing Circulars and forms, Rs. 66 for printing the Catalogue of Tibetan Xylographs, and Rs. 35 for purchasing a copper-plate; particulars of the plate were given in the Proceedings for December 1890.

The budget estimate for the present year has been fixed as follows. Receipts Rs. 15,570. Expenditure Rs. 14,323. On the receipt side the estimate for *Subscriptions* has been raised to Rs. 7,500, in consequence of the rates of subscription to the Journal and Proceedings having been brought back to those which obtained prior to 1886, when they were lowered in the hope of causing an increase of sales. There will be the full receipt of Rs. 720 this year for rent of the two rooms occupied by the Photographic Society, and also a new item for *Admission Fees*, which has been taken at Rs. 700, these are now to be treated as Ordinary income instead of being added to the “Reserve Fund.” *Miscellaneous* has been increased by Rs 800 in expectation of a refund of Income Tax erroneously deducted in past years from the interest on the Government Securities belonging to the Society, the Collector of Income Tax having granted a certificate that it is not liable to assessment under the Income Tax Act. The head of *Interest on Investments* has been taken on the amount now held in securities, but there will be an increase if the proposal to invest a portion of the Funds in Municipal or other Debentures bearing a higher rate of interest is carried out.

On the expenditure side the changes in last year's estimate are small. *Postage* has been increased by Rs. 100, in consequence of the Society's publications being now sent to Mofussil and Foreign Members, and



Societies &c. immediately on publication, instead of quarterly, as formerly. A small increase of Rs. 200 has been made for *Books*, and of Rs. 200 for the *Journal*. The other heads remain unaffected. No provision has been made for *Auditors Fee*, as it is proposed to revert to the former practice of having the accounts audited by two Members of the Society.

This is in accordance with rule 58 (h).

The details of the Budget Estimate are as follows:—

#### RECEIPTS.

|                         |     |     |     |        |   |   |
|-------------------------|-----|-----|-----|--------|---|---|
| Subscriptions           | ... | ... | Rs. | 7,500  | 0 | 0 |
| Sale of Publications    | ... | ... | ... | 400    | 0 | 0 |
| Interest on Investments | ... | ... | ... | 5,388  | 0 | 0 |
| Rent of rooms           | ... | ... | ... | 720    | 0 | 0 |
| Admission Fees          | ... | ... | ... | 700    | 0 | 0 |
| Miscellaneous           | ... | ... | ... | 862    | 0 | 0 |
| Total Rs.               |     |     |     | 15,570 | 0 | 0 |

#### EXPENDITURE.

|                         |     |     |     |        |   |   |
|-------------------------|-----|-----|-----|--------|---|---|
| Salaries                | ... | ... | Rs. | 4,390  | 0 | 0 |
| Commission              | ... | ... | ... | 400    | 0 | 0 |
| Stationery              | ... | ... | ... | 100    | 0 | 0 |
| Lighting                | ... | ... | ... | 80     | 0 | 0 |
| Petty Repairs           | ... | ... | ... | 10     | 0 | 0 |
| Municipal Taxes         | ... | ... | ... | 819    | 0 | 0 |
| Postage                 | ... | ... | ... | 700    | 0 | 0 |
| Freight                 | ... | ... | ... | 10     | 0 | 0 |
| Meeting                 | ... | ... | ... | 83     | 0 | 0 |
| Contingencies           | ... | ... | ... | 150    | 0 | 0 |
| Books                   | ... | ... | ... | 1,800  | 0 | 0 |
| Local Periodicals       | ... | ... | ... | 31     | 0 | 0 |
| Binding                 | ... | ... | ... | 450    | 0 | 0 |
| Journal, Part I         | }   | ... | ... | 4,200  | 0 | 0 |
| Journal, Part II        |     |     |     |        |   |   |
| Proceedings             | ... | ... | ... | 1,000  | 0 | 0 |
| Printing Circulars, &c. | ... | ... | ... | 100    | 0 | 0 |
| Total Rs.               |     |     |     | 14,323 | 0 | 0 |

#### London Agency.

Messrs. Trübner's statement of account with the Society for 1888, which has been so long overdue, was received just before the close of



the year. The only reason assigned for the great delay was, that it had evidently been sent and miscarried. The statement shows a debit balance of £369-6-4, of which £109-19-7, the balance of account for 1887, was remitted in April 1889, leaving a net debit balance of £259-6-9 on the transactions of the year.

The sales of the Society's publications effected by Messrs Trübner in 1888 amounted to £24-5-0 and of the *Bibliotheca Indica* to £16-13-0.

The number of copies of parts of the *Journal*, of the *Proceedings*, and of the *Bibliotheca Indica* sent to the Agents during 1890 for sale was 799, 450 and 1307 respectively, valued at Rs. 1,650.

Nine invoices of books purchased, and of publications of various Societies sent in exchange, were received during the year. The value of the books purchased amounted to £80-14-6.

A further remittance of £100 was made to Messrs. Trübner early in the year towards their accounts for 1888. Their accounts for 1889, have not yet been received.

#### **Library.**

The total number of volumes, or parts of volumes, added to the Library during the year was 2,168, of which 747 were purchased, and 1,421 presented or received in exchange for the Society's publications.

The first fasciculus of the Catalogue of the Persian works in the Oriental Library has been published; the remaining portion of the work is in the press and expected to be ready very shortly.

#### **Publications.**

There were published during the year, ten numbers of the *Proceedings* containing 268 pages of letter press and 3 plates; four numbers of the *Journal*, Part I, (Nos. 3 and 4 of 1889 and Nos. 1 and 2 of 1890) containing 325 pages of letter press and 13 plates; and three numbers of the *Journal*, Part II containing 270 pages of letter press and 8 plates. Two numbers of the late Mr. Atkinson's Catalogue of the *Insecta* of the Oriental Region containing 325 pages of letter press were also issued as a Supplement to Part II; and the indexes to the *Journal* for 1888 and 1889, the latter containing two plates belonging to the *Journal* for that year.

#### **Building.**

An unforeseen expenditure of Rs. 193-5-9 had to be incurred in carrying out certain alterations in the drainage of the grounds connecting with the sewer, consequent on a notice from the Municipality. The approval of the Municipality was obtained to the estimate for the work, as also to the manner in which it had been carried out.

### Coin Cabinet.

During the year 87 coins were added to the Cabinet, of which 2 were of gold, 21 of silver, and 64 of copper. One of the gold coins was presented by the Govt. N.-W. Provinces, all the rest were acquired under the Treasure Trove Act, and were from the Bengal Presidency. They all belong to ordinary types and detailed notices of them have been given in the Proceedings for May, June and July.

### Office of the Secretaries.

Dr. Hoernle carried on the duties of Philological Secretary until June, when he went on leave and Major Sadler took them up until September when he left Calcutta temporarily and made them over to Dr. Solf, who carried them on until the middle of December, when he was obliged to leave India owing to ill health. Mr. Tawney has agreed to carry on the work till Dr. Hoernle's return.

Mr. Wood-Mason resigned the editorship of the Journal, Part II in June and Mr. Sclater was appointed Natural History Secretary and editor. He went on short leave in September, and Col. Waterhouse took charge of the Journal during the interval.

Dr. W. King carried on the duties of Treasurer during the year except for two periods of about two months each, when he had to leave Calcutta on duty, and Mr. Sclater took charge of the work.

Mr. H. Ronaldson was Assistant-Secretary throughout the year.

Mr. J. H. Elliott rejoined his post of Assistant-Librarian on the expiry of his leave in March. There were no changes in the posts of Cashier, Pandit and Copyist, which were held by the permanent incumbents Bábú Nritya Gopal Bose, Pandit Hari Mohan Vidyábhúshan and Bábú Joges Chandra Chatterjee respectively.

### Bibliotheca Indica.

Forty-five fasciculi were published during the year, of which twelve were in the Arabic-Persian, twenty-seven in the Sanskrit, and six in the Tibetan series. They belong to twenty-one different works, of which three are in the Arabic-Persian, fifteen in the Sanskrit, and three in the Tibetan series. There was one new publication in each series, viz., the *Riyázu-s-Salátín*, in the first series, the *Nyáyavindu Tíká* (complete in one fasciculus) in the second, and the *Pag Sam Thi sin* in the third. Six works were completed of previous years, of which two, the *Tárikh-i-Firúz Sháhí*, and the *Riyázu-s-Salátín*, belong to the Arabic-Persian, and the *Advaita Brahma Siddhi*, the *Kurma Purána*, the *Manu Tíká Sangraha*, and the *Uvásagadasáo* to the Sanskrit series.

It was stated in the Annual Report for 1890 (p. 22) that 44 fasci-

culi had been estimated as the out-turn for the year at a probable cost of Rs. 16,588 : the actual out-turn has been 45 fasciculi, as stated above. The expenditure out of the Oriental Publication Fund during the year amounted to Rs. 15,206 which includes printing charges for 38 fasciculi, and editing charges for 28 fasciculi, and gives an average of Rs. 460 for each fasciculus. For the year 1891 the out-turn may be reckoned at 36 fasciculi.

No new works were sanctioned for publication during the year : On the other hand it has been decided not to publish the translation of the *Riyāzu-s-Salātīn*, which was sanctioned in 1887, and to discontinue the translation of the *Tuzuk-i-Jahāngīrī*, of which one fasciculus has been published.

The translation of the second volume of the *Ain-i-Akbarī*, which was mentioned in the report for 1887 to have been taken up by Colonel Jarrett, has been well advanced, and is expected to be completed in the present year.

Of the following works of which fasciculi had appeared in previous years, no fasciculi were published during the year under review.

1. TABAQĀT-I-NĀSIRĪ, (Index of persons and places) ; 2, PRĀKRITA LAKSHANA (English translation and Notes) ; 3, KĀTANTRA (introduction) ; 4, SŪSŪTA SAMHITĀ (English translation) ; 5, ĀPASTAMBA ŚRAUTA SŪTRA (Text) ; 6, LALITA VISTARA (English translation).

Of the following works sanctioned in previous years, no fasciculi have as yet appeared.

1. PRĀKRITĀDHYĀYA (Text and translation) ; 2, CHARAKA (English translation, with Notes) ; 3, NAQAID-UL-FARAZDAQ-JERIR (Text with English translations in prose and verse) ; 4, KĀLA VIVEKA (Text) ; 5, VEDĀNTA SŪTRA, Commentaries on, (Text) ; (two of these, *viz.*, ANUBHĀSHYAM and ŚRĪBHĀSHYAM, have been commenced) ; 6, YOGINĪ TANTRA (Text) ; 7, KARANA GRANTHA (Text) ; 8, MUNTAKHABU-T-TAWARĪKH, Vol. I, (English translation) ; 9, TĀJ-UL-MAĀSIR (Text) ; 10, TĀRĪKH-I-WASSAF (Text) ; 11, TĀRĪKH-I-YĀMINĪ (English translation, with Notes) ; 12, JĀNĀTĀDHARMAKATHĀ and VIPĀKA SŪTRA (Text) ; 13, SAD-DHARMA PUṆḌARĪKA (Text) ; 14, AL TABRĪZĪ's Commentary (Text) ; 15, SVAYAMBHŪ PURĀṆA (Text) ; 16, BAUDHĀYANĪYA ŚRAUTA SŪTRA, and HIRANYAKEŚĪ ŚRAUTA SŪTRA (Text) ; 17, ĀIN-I-AKBARĪ, Vol. II, (English translation) ; 18, RIYĀZU-S-SALĀTĪN (Text and English translation) ; 19, BHATṬOTPALA's Commentary on VARĀHA MIHIRA's BṚIHAT SAMHITĀ.

No new works were sanctioned for publication during the year.

The following is a descriptive list of the publications issued during 1890.

*A. Arabic and Persian Series.*

1. MA'ÁSRU-L-UMARÁ or memoirs of the nobles of the Mughal Court of Delhi by a nobleman of that Court, compiled during the early part of the last century. It contains biographical accounts of those great men who worked hard for the establishment and the consolidation of the Mughal empire in India. Nos. 740, 750, 751, 756, 762, 769, 778. Vol. II, Fasc. 9, Vol. III, Fasc. 1, 2, 3, 4, 5, 6. Total, *seven* Fasc.

2. RIYÁZU-S-SALÁTÍN, by Ghulám Husain, called Salím, a native of Zaidpur. It is a history of Bengal to which is prefixed a short geography of Bengal. The work of editing and translating the work was entrusted to Maulvi Abdul Hak Abid, B. A., but the translation has been abandoned for the present. Nos. 755, 764, 771, 775, Fasc. 1, 2, 3, 4. Total *four* Fasc.

3. TÁRIKH-I-FÍRÚZ SHÁHÍ, a history of the reign of Fírúz Sháh Tughlaq of the Tughlaq dynasty of Delhi by Shams-i-Siráj-i-'Afif, has advanced by one fasciculus only, No. 738, Fasc. 5. There is another work on the same subject by Ziyá-i-Baraní.

*B. Sanskrit Series.*

1. ADVAITA-BRAHMA-SIDDHI by Sadánanda Yati has been completed. It contains four chapters designated "blows with a club." It refutes the various philosophical doctrines that obtained currency in ancient India and establishes the non-dual theory. The *Vedánta Dīṇḍīma*, a short work on the Vedānta philosophy, in verse, has been added to the work as an appendix. The editor Paṇḍit Váman Sástṛí, Upādhyáya of Islámpur in Bombay, has added a very large number of foot-notes which have the rare merit of really elucidating the text, No. 747. Fasc. 4. Total *one* Fasc.

2. BRIHAD-DEVATÁ, a very ancient work attributed to Śaunaka Áchārya. It is an index to the Rīg Veda giving the *devatá*, the deity praised, *i. e.*, the subject-matter of every *sūkta*, and *rich* of that Veda. It is one of those works which enabled the ancient *rishis* to preserve the purity of the Vedic text. Edited by Rájá Rájendralála Mitra, LL. D., C. I. E. The work has advanced by one fasciculus only. No. 760, Fasc. 2.

3. CHATURVARGA CHINTÁMAṆI is an exhaustive work on Hindu rituals by Hemádri the Court Paṇḍit of one of the Yádava kings of Devagiri during the thirteenth century. The author is reported to have been a great friend of Vopadeva, the celebrated author of the *Mugdha-*



bodha. Two volumes of the work have been completed and the first part of the third volume. The Editors, Paṇḍits Jogeśvara Smṛitiratna and Kāmākhyānātha Tarkavāgiśa are now engaged with the second part of the third volume which relates to the *Srāddha* ceremony. Nos. 746, 763, 774, Vol. III, Pt. II, Fasc. 5, 6, 7. Total *three* Fasc.

4. KŪRMA PURĀṆA, edited by Babu Nilmaṇi Mukhopādhyāya, Professor of Sanskrit, Presidency College, Calcutta, has been completed. It contains a learned preface by the editor in which the character and nature of the Puranic literature has been fully discussed. No. 743, Fasc. 9. Total *one* Fasc.

5. MADANA PĀRIJĀTA, written under the patronage of Madana Pāla Deva of Kāshthā or Kachchhā a city near Delhi on the Jamunā. Madana Pāla was a great patron of learning and a large medical work was also compiled under his patronage. The Pārijāta quotes from the Chaturvarga Chintāmaṇi and the Mitāksharā and appears to have been written about the fifteenth century. It has advanced by two fasciculi. Nos. 757, 770, Fasc. 7, 8.

6. MANU-ṬĪKĀ SAMGRAHA, edited by Dr. Julius Jolly, Professor of Sanskrit, Würzburg, contains extracts from six of the well-known commentaries of Manu. These extracts are meant simply to explain the texts of the original, all additional matter and arguments having been excluded. The work has advanced by one fasciculus, which brings the extracts to the end of the third chapter of Manu. It has now been stopped by agreement with the editor, owing to the publication of all the Manu commentaries by the late lamented Rao Vishvanāth Maṇḍalik. No. 728, Fasc. 3. Total *one* Fasc.

7. NYĀYA-VINDU ṬĪKĀ, a commentary to the Nyāya-vindu. A work on the Buddhist system of logic, edited by Professor Peter Peterson, M. A., of Bombay. It is a solitary example of a Buddhist work preserved in the Continent of India in a Jaina Library. The learned editor has succeeded during the course of his edition in getting a copy of the original work, the Nyāya-vindu. The present commentary is by Dharmottarāchārya who is reputed to be the founder of the Dharmotariya school of the followers of Buddha. The learned editor is now engaged in making a translation of both the text and the commentary. No. 741, complete in one Fasc.

8. NYĀYA KUSUMĀNJALI PRAKARAṆAM by Udayanāchārya. This work is to be distinguished from the metrical work of the same name by the same author, edited some time ago by E. B. Cowell, Esq. The edition is in the hands of Mahāmahopādhyāya Chandrakānta Tarkā-lankāra. It is accompanied with the commentary of Varddhamāna, copiously illustrated by extracts from the gloss of Ruchidatta. It has



advanced by four fasciculi. Nos. 745, 749, 765, 768. Vol. IV, V, VI and Vol. II, Fasc. I.

9. PARÁSARA SMṚITI by the same learned editor, has advanced by three fasciculi, two belonging to the second volume treating of *Prāyaśchitta*, and one to the third volume treating of *Vyavahāra*. The work is accompanied with the commentary of the great Mādhavāchārya and is the standard work on Hindu Law and Rituals in Southern India. Nos. 759, 761, 766, Vol. II, Fasc. 3, 4, Vol. III, Fasc. 1. Total *three* Fasc.

10. SĀMKHĀYANA S'RAUTA SŪTRA edited by Dr. Alfred Hillebrandt, Professor of Sanskrit in the University of Breslau. The second volume has advanced by one fasciculus. This volume contains the commentary by Ānarttiya, the son of Varadatta, on the text of Sāmkhāyana. No. 754, Vol. II, Fasc. 2. Total *one* Fasc.

11. ŚRĪ-BHĀSHYAM edited by Paṇḍit Rāmnāth Tarkaratna is a commentary on the Vedānta aphorisms of Vādarāyaṇa by Rāmānujāchārya, the founder of a Vaishnava sect in Southern India who flourished about the thirteenth century A. D. This commentary adopts the non-dual theory of Sāmkara with certain modifications. No. 737, Fasc. 2. Total *one* Fasc.

12. TAITTIRĪYA SAMHITĀ edited by Mahāmahopādhyāya Maheśachandra Nyāyaratna, C. I. E., has advanced by one fasciculus. It is the text of the Black Yajur Veda and is accompanied with the commentary of Mādhavāchārya. No. 744, Fasc. XXXIV. Total *one* Fasc.

13. TATTVA-CHINTĀMAṆI, edited by Paṇḍit Kāmākhyānātha Tarkavāgīśa, has advanced by four fasciculi. The editor is now going on with the second volume of the work which treats of Inference. Nos. 735, 748, 758, 772, Vol. II, Fasc. 3, 4, 5, 6. Total *four* Fasc.

14. TULSĪ SATSAI, *i. e.*, seven hundred verses by Tulsidās the great Hindī poet. Each verse contains a riddle and a double entendre, one meaning of which is a praise of Rāma. The work is being edited by Paṇḍit Bihārīlāl Chaube. It has advanced by two fasciculi. Nos. 739, 753, Fasc. 2, 3.

15. UVĀSAGADASĀO edited by Dr. A. F. R. Hoernle. With this fasciculus which contains indices the work is now completed. No. 752, Fasc. 6. Total *one* Fasc.

#### C. Tibetan Series.

1. SHER PHYIN edited by Bābū Pratāpa Chandra Ghosha is a Tibetan translation of the Śata Sāhasrikā Prajñā Pāramitā or the Prajñā Pāramitā of 100,000 verses. The learned editor is omitting all repetitions which abound in the work. Nos. 736, 742, 767, Vol. I, Fasc. 4, 5, and Vol. II, Fasc. 1. Total *three* Fasc.

2. BODHISATTVĀDĀNA KALPALATĀ, by Kshemendra, under the

joint editorship of Bábú Sarat Chandra Dás, C. I. E., and Paṇḍit Hari-mohan Vidyábhúshan, Oriental Librarian to the Asiatic Society, has advanced by two fasciculi. The work is accompanied with a Tibetan translation made about 400 years ago at Lhásá. Nos. 773 and 777, Vol. I, Fasc. 3, Vol. II, Fasc. 1. Total *two* Fasc.

3. PUG SAM THI SIN is a free prose rendering in modern Tibetan of the above work as distinguished from the metrical and literal version in classical Tibetan given in No. 2. Pug Sam Thi Sin is recited daily almost in every household in Tibet. No. 776, Fasc. 1. Total *one* Fasc.

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*List of all Societies, Institutions, &c., to which the Publications of the Asiatic Society have been sent during the year, or from which Publications have been received.*

\* Societies, &c., which have received the Asiatic Society's publications, and have sent their publications in return.

† Societies, &c., which have received the Asiatic Society's publications, but have sent none in return.

§ Societies, &c., whose publications have been received, but to which nothing has been sent in return.

\* Allahabad :—Editor, Pioneer.

† Amsterdam :—Royal Zoological Society.

\* ————— :—Koninklijke Akademie van Wetenschappen.

† Angers :—Société d' Etudes Scientifiques d' Angers.

\* Baltimore :—Johns Hopkins University.

\* Batavia :—Society of Arts and Sciences.

\* ————— :—Kon Natuurkundige Vereeniging in Nederlandsch-Indië.

\* Berlin :—Gesellschaft Naturforschende Freunde zu Berlin.

\* ————— :—Royal Academy of Sciences.

§ ————— :—Entomologische Verein.

† Berne :—Société Suisse d' Entomologie.

§ Birmingham :—Birmingham Philosophical Society.

\* Bombay :—Anthropological Society.

\* ————— :—Bombay Branch, Royal Asiatic Society.

\* ————— :—Editor, Indian Antiquary.

\* ————— :—Editor, Times of India.

\* ————— :—Natural History Society.

\* Boston :—Natural History Society.

§ ————— :—American Philological Association.

§ Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.

- \* Bordeaux :—Société Linnéenne.
- § ——— :—Royal Geographical Society of Australasia, Queensland Branch.
- † Brookville :—Society of Natural History.
- † Brunswick :—Verein für Naturwissenschaft.
- † Brussels :—L' Académie Royale des Sciences.
- † ——— :—Musée Royal d' Histoire Naturelle de Belgique.
- \* ——— :—Société Entomologique de Belgique.
- \* ——— :—Société Royale Malacologique de Belgique.
- § ——— :—Société Royale des Sciences de Liége.
- \* Buda Pest :—Royal Hungarian Academy of Sciences.
- § ——— :—La Société Hongroise de Géographie.
- \* Buenos Ayres :—National Museum.
- \* ——— :—Academia National de Ciencias de la Republica Argentina.
- \* Calcutta :—Agri-Horticultural Society of India.
- \* ——— :—Geological Survey of India.
- \* ——— :—Editor, Englishman.
- \* ——— :—Editor, Hindoo Patriot.
- \* ——— :—Editor, Indian Daily News.
- § ——— :—Editor, Indian Engineering.
- \* ——— :—Editor, Indian Mirror.
- \* ——— :—Indian Museum.
- † ——— :—Mahommedan Literary Society.
- § ——— :—Photographic Society of India.
- † ——— :—Public Library.
- \* ——— :—Survey of India.
- \* ——— :—Tuttobodhini Shova.
- † ——— :—University Library.
- † Cambridge :—University Library.
- \* Cassel :—Der Verein für Naturkunde.
- \* Cherbourg :—Société Nationale des Sciences Naturelles.
- \* Christiania :—University Library.
- \* Colombo :—Ceylon Branch, Royal Asiatic Society.
- \* Copenhagen :—La Société Royale des Antiquaires du Nord.
- † Cuttack :—Cuttack Library.
- † Danzig :—Naturforschende Gesellschaft.
- \* Dehra Dun :—Great Trigonometrical Survey.
- \* Dorpat :—Naturforscher-Gesellschaft der Universität.
- \* Dresden :—Entomologischen Vereins "Iris."
- \* ——— :—Königlichen Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden.
- \* Dublin :—Royal Dublin Society.

- † Dresden :—Royal Irish Society.
- \* Edinburgh :—Royal Society.
- § ———— :—Royal Physical Society.
- \* ———— :—Scottish Geographical Society.
- \* Florence :—Società Italiana di Anthropologia, Etnologia e Psicologia Comparata.
- \* ———— :—Società Africana d' Italia.
- \* Frankfurt :—Senckenbergische Naturforschende Gesellschaft.
- \* ———— :—Naturwissenschaftlichen Vereins des Regierungsbezirks.
- \* Geneva :—Société de Physique et d' Histoire Naturelle.
- \* Genoa :—Museo Civico di Storia Naturale.
- \* Giessen :—Oberhessische Gesellschaft für Natur und Heilkunde.
- \* Graz :—Naturwissenschaftlicher Verein für Styria.
- § Hague :—Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlansch-Indië.
- \* Hamburg :—Naturhistorisches Museum zu Hamburg.
- § ———— :—Naturwissenschaftlichen Verein.
- † Halle :—Deutsche Morgenländische Gesellschaft.
- † ———— :—Kaiserlichen Leopoldinisch-Carolinische Akademie.
- † Hamilton :—Hamilton Association (Canada).
- \* Havre :—Société de Géographie Commerciale du Havre.
- \* Helsingfors :—Societas pro Flora et Fauna Fennica.
- † ———— :—Société des Sciences de Finlande.
- § Ithaca (U. S. A.) :—Cornell University.
- § Jassy :—Societății Stintifice Literare.
- \* Kiev :—Société des Naturalistes.
- \* Königsberg :—Die physikalische-Oekonomische Gesellschaft.
- \* Lahore :—Editor, Civil and Military Gazette.
- † ———— :—Agricultural Society.
- § Leipzig :—Deutsche Morgenländische Gesellschaft.
- † Leyden :—Royal Herbarium.
- \* Liège :—Société Géologique de Belgique.
- † ———— :—Société des Sciences.
- \* Liverpool :—Literary and Philosophical Society.
- \* London :—Anthropological Institute.
- \* ———— :—Editor, Academy.
- \* ———— :—Editor, Athenæum.
- \* ———— :—British Museum.
- \* ———— :—Geological Society.
- \* ———— :—Institution of Civil Engineers.
- \* ———— :—Institution of Electrical Engineers.
- \* ———— :—Institution of Mechanical Engineers.



- \* London :—Editor, *Nature*.
- \* ——— :—Linnean Society.
- † ——— :—Royal Asiatic Society of Great Britain and Ireland.
- \* ——— :—Royal Astronomical Society.
- \* ——— :—Royal Geographical Society.
- \* ——— :—Royal Institution of Great Britain.
- \* ——— :—Royal Microscopical Society.
- \* ——— :—Royal Society.
- \* ——— :—Statistical Society.
- \* ——— :—Zoological Society.
- † Lyons :—La Société d' Agriculture, d' Histoire Naturelle et des Arts Utiles.
- † ——— :—Muséum d' Histoire Naturelle.
- \* ——— :—La Société d' Anthropologie.
- † Madison, Wisconsin :—Wisconsin Academy of Sciences, Arts, and Letters.
- † Madras :—Literary Society.
- \* ——— :—Government Central Museum.
- † Manchester :—Literary and Philosophical Society.
- § Melbourne :—Royal Society of Victoria.
- \* Mendon, Ill. :—Editor, *American Antiquarian and Oriental Journal*.
- \* Mexico :—Sociedad Científica "Antonio Alzate."
- § ——— :—Observatorio Meteorológico-Magnético Central.
- § ——— :—Estados Unidos Mexicanos.
- § ——— :—Deutschen Wissenschaftlichen Vereins in Mexico.
- § Minneapolis :—Minnesota Academy of Natural Sciences.
- \* Moscow :—Société Imperiale des Naturalistes.
- \* ——— :—Imperial Society of Amateurs of Natural Sciences, Anthropology and Ethnology.
- \* Munich :—K. Bayerische Akademie der Wissenschaften.
- \* Naples :—Società Africana d' Italia.
- † New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- † Newport (R. I.) :—Natural History Society.
- \* New York :—American Museum of Natural History.
- \* Ottawa :—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- \* Paris :—Société de Géographie.
- \* ——— :—Société d' Anthropologie.
- \* ——— :—Société Asiatique.



- \* Paris :—Musée Guimet.
- † ——— :—National Library.
- \* ——— :—Société Zoologique.
- \* ——— :—Société Académique Indo-Chinoise.
- § ——— :—Institution Ethnographique.
- † ——— :—Museum d' Historie Naturelle.
- \* Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Philosophical Society.
- \* ——— :—Journal of Comparative Medicine and Surgery.
- \* Pisa :—Società Toscana di Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Raleigh, N. C :—Elisha Mitchell Scientific Society.
- § Rio de Janeiro :—Imperial Observatorio.
- § Rome :—Società degli Spettroscopisti Italiani.
- § Roorkee :—Editor, Indian Forester.
- \* St. Petersburg :—Comité Géologique.
- † ——— :—Imperial Library.
- \* ——— :—Russian Geographical Society.
- \* ——— :—Académie Impériale des Sciences.
- \* ——— :—Jardin Impériale de Botanique.
- § ——— :—La Société des Naturalistes de Kiew.
- \* San Francisco :—Californian Academy of Arts and Sciences.
- \* Santiago :—Deutsche Wissenschaftliche Vereines.
- § Schaffhausen :—Swiss Entomological Society.
- \* Shanghai :—China Branch, Royal Asiatic Society.
- \* Simla :—United Service Institution of India.
- \* Stettin :—Entomological Society.
- \* Stockholm :—Entomologische Tidskrift.
- \* ——— :—Royal Swedish Academy of Sciences.
- \* Sydney :—Royal Society of New South Wales.
- \* ——— :—Linnean Society of New South Wales.
- § Taiping :—Government of Perak.
- \* Toronto :—Canadian Institute.
- \* Tokyo :—Imperial University of Japan.
- \* ——— :—Deutsche Gesellschaft für Natur-und Völkerkunde Ostasiens.
- § Trenton, N. J.—Trenton Natural History Society.
- \* Trieste :—Società Adriatica di Scienze Naturali.
- \* Turin :—Reale Accademia delle Scienze.
- § ——— :—Osservatio Regia Universita.
- † Ulwar :—Ulwar Library.
- \* Vienna :—Anthropolgoische Gesellschaft.

- \* Vienna :—K. K. Akademie der Wissenschaften.
- \* ——— :—K. K. Geologische Reichsanstalt.
- \* ——— :—K. K. Naturhistorische Hofmuseums.
- \* ——— :—K. K. Zoologisch-Botanische Gesellschaft.
- † ——— :—Ornithologische Verein.
- § ——— :—Österreichischen Touristen-Club.
- \* Washington :—Commissioners of the Department of Agriculture.
- \* ——— :—Smithsonian Institution.
- \* ——— :—United States Geological Survey.
- :—United States National Museum.
- § Wellington :—New Zealand Institute.
- \* Württemberg :—Natural History Society.
- † Yokohama :—Asiatic Society of Japan.
- \* Zagreb :—Archæological Society.

#### ABSTRACT OF COUNCIL PROCEEDINGS DURING 1890.

##### *January 30th, Ordinary Meeting.*

An offer from the Baptist Mission Press to make a reduction in the rate for printing extra copies of Author's papers in excess of 100 copies, and for title page and cover, was accepted.

Read a letter from the Deputy Commissioner of Hardoi, conveying the grateful acknowledgments of the Committee of the Colvin Library for the presentation of books made by the Council.

An enquiry from the Government of India regarding the merits of Dr. Leitner's Hunza and Nagyr Hand-book was referred to the Philological Committee.

An application from Pundit Satya Vrata Samasrami for permission to edit the *Aitareya Brahmana*, with the commentary of Sargana, and explanatory notes, was referred to the Philological Committee.

It was resolved with reference to a representation made by the Finance Committee regarding the very heavy expenditure on the Journal, Part II, that a quarterly statement of accounts should be submitted by the Natural History Secretary.

##### *February 27th, Ordinary Meeting.*

Two copies of a new publication called the "Usha," to contain works of Vedic literature, edited by Pundit Satya Vrata Samasrami, were ordered to be subscribed for.

Messrs. Meugens and King were appointed Auditors of the Society's Accounts for the present year.

Permission was given to the Baptist Mission Press to make the

following charges for "doing up" Supplements to the Journal, viz., Rupees 5 for numbers not exceeding, or only slightly exceeding 100 pages; Rupees 8 for numbers extending to 200 pages, or thereabouts; and Rupees 3-8 for numbers equal to an average Proceedings, or less.

The sum of Rs. 2,500 was assigned to Part II of the Journal, and Rupees 1,500 to Part I, as a provisional arrangement for the current year.

It was decided that the Trustees of the Indian Museum should be asked to pay one-third of the cost for printing the lists of Insects of the Oriental Region in consideration of 100 extra copies of the lists being supplied to the Trustees.

The various Committees for 1890 were appointed.

The Philological Committee having recommended that no new works should be sanctioned for publication in the Bibliotheca Indica for the present, an intimation to that effect was made to Pandit Satya Vrata Samasrami with reference to his application to edit the *Aitareya Brahmana*.

A proposal by Bábú Asutosh Mukhopadhyáya to publish certain Astronomical works, was referred to the Philological Committee.

Bábú Gaurdás Bysack was informed with reference to his application for aid in tracing the history of Calcutta to the earliest possible period, that the Council, while sympathizing with his objects, were unable to materially forward his views.

#### *27th March, Ordinary Meeting.*

Permission was given to Dr. Gustav Oppert to purchase a copy of all the Sanskrit works published by the Society at the same rate of discount as allowed to Booksellers.

The loan of the Persian manuscript *Tazkirah-i-Al-i-Daud* in the Society's library was sanctioned to Dr. Oskar Mann of Berlin, through the German Consulate General in Calcutta.

Bábú Saratchandra Dás was allowed to take to Darjeeling two Tibetan Xylographs for the purpose of getting them tabulated in connection with the Tibetan Dictionary which he is compiling for Government.

The Government of India was informed that the Society was not in a position to give an opinion as to the merits of Dr. Leitner's Hunza and Nagyr Hand-book.

An offer from Otto Harrassowitz of Leipzig to act as Commission Agent to the Society for the sale of the Bibliotheca Indica publications for Germany and the Continent was declined.

An exchange of publications with the Geographical Society of Leipzig was approved.

The Linnean Society of New South Wales were asked to give the back numbers of their Proceedings from 1882 in exchange.

*May 1st, Ordinary Meeting.*

Mr. H. Beveridge was appointed a Trustee of the Indian Museum on behalf of the Asiatic Society in place of Mr. E. Gay, leaving India.

Read a letter from the Honorary Secretary to the Trustees Indian Museum, forwarding an extract from the proceedings of the General Committee of the Trustees conveying to Mr. Gay the expression of the Trustees thanks for his services and regret at losing him.

The publications of the Bibliotheca Indica were ordered to be sent to the Toronto University, Canada, the building having been destroyed by fire with its valuable Library and collections.

An offer from the Museum d'Histoire Naturelle, Paris, for an exchange of publications to commence from 1889, with the 3rd Series of the "Nouvelles Archives du Museum" was accepted.

A letter from the Honorary Secretary of the Photographic Society of India offering to rent two rooms on the ground floor of the Asiatic Society's building at Rs. 60 a month, was circulated to the Council.

On the recommendation of the Philological Secretary, the Council approved the nomination by Dr. A. Chatterjee of the Vaidya Pandit to aid him in the translation of the *Susruta*.

*May 29th, Ordinary Meeting.*

A letter from Mahádev Chimnáji Ápté intimating that he had founded an "Anandás'rama" at Poona for the collection and publication of Sanskrit Manuscripts and forwarding copies of three of the works published, with a request to be informed of the character of the work done, was referred to the Philological Committee.

Read a letter from the Honorary Secretary to the Trustees of the Indian Museum reporting that the Trustees would contribute for the present year one-third of the amount incurred in printing the Catalogues of Oriental Insecta.

The names of Astronomers in India were furnished to the Director of the Specula Vaticana at Rome with reference to his report that the Vatican Observatory had been revived, and that steps were being taken to make it as useful as possible to science.

A draft letter to the Photographic Society of India embodying the terms on which they would be allowed to rent two rooms on the ground floor of the Asiatic Society's building was circulated to the Members of Council.

It was resolved that the 1st fasciculus of the Catalogue of Persian



books and Manuscripts in the Society's library should be sold at one rupee, and the 2nd fasciculus at eight annas a copy : copies to be distributed to all persons on the Bibliotheca Indica list, and the Maulvi to be paid at the rate of Rs. 1-4 per page for his labor in compiling the Catalogue.

The recommendation of the Finance Committee that future editions of works published through the Oriental Publication Fund should be reduced from 500 to 300 copies of each fasciculus was confirmed.

Captain Sadler consented to act as Philological Secretary during the absence of Dr. Hoernle on leave.

*June 26th, Ordinary Meeting.*

The Linnean Society of New South Wales consented to an exchange of back publications from 1882.

The condolences of the Council were conveyed to the Koninklijk Zoologisch Genootschap, Amsterdam, on the death of Dr. G. F. Westerman, the Founder and Director of the Society.

The University of Lyon was informed in reply to an application for the back numbers of the Bibliotheca Indica publications to complete the sets in their Library, that the books could not be spared.

An application from the Directors of the Deutscher Wissenschaftlicher Verein, Mexico, for an exchange of publications was declined with thanks.

On the report of the Philological Secretary an application from Pandit Jaistharam Mucoondjea of Bombay for permission to reprint all the works of the Bibliotheca Indica that are out of stock or incomplete was refused, but he was informed that an application to reprint any particular work would be considered.

The Photographic Society of India were informed of the conditions on which they would be allowed the use of the two rooms on the ground floor of the Asiatic Society's building.

A suggestion from Mr. C. J. Rodgers to catalogue the Society's Coins was deferred till he came to Calcutta.

Sanction was given to the entertainment by Bábú Pratápchandra Ghosha of a Pundit on Rs. 50 a month to assist him in editing the "*Sher-Phyin*."

Dr. Hoernle reported that the grave of the late Mr. Blochmann in the Circular Road Cemetery was in very good condition, and needed no repairs at present.

A Resolution by the Finance Committee regarding the expenditure on Part II of the Journal having exceeded the budget allowance, and



suggesting that the attention of the Editor should be drawn thereto, was confirmed.

*July 31st, Ordinary Meeting.*

The Photographic Society of India reported acceptance of the conditions prescribed by the Council for renting the two rooms they had applied for, and permission was given to make the necessary alterations to suit the rooms to their requirements.

Dr. Prain was informed in reply to a request to pay for the printing of his paper on "An additional species of *Ellipanthus*," and the plate to accompany it, that there would be no objection to his printing the plate, but that the cost of printing the text would be borne by the Society.

It was decided on the report of the Philological Committee not to express an opinion as to the character of the Sanskrit works published by Mahádev Chinmáji Ápté, but that copies of the works should be purchased for the Society's Library.

A recommendation by the Finance Committee to modify Rule 70, so as to allow of Admission Fees being treated as ordinary income, instead of being invested in the Permanent Reserve Fund, was referred to Resident Members in accordance with Rule 64, (a).

The Government Promissory Notes amounting to Rs. 1,20,000, belonging to the Society standing in the  $4\frac{1}{2}$  per cent. loans of 1878 and 1879, which mature on 15th September 1893, were authorized to be transferred to the 4 per cent. loan of 1854-55, in terms of the Notification of the Government of India offering payment in cash of the additional  $\frac{1}{2}$  per cent. interest up to date of maturity.

*August 28th, Ordinary Meeting.*

The Director of the National Society of Natural Sciences and Mathematics, Cherbourg, was informed in reply to an application for the Journal, Part I, which had not been received since 1886 that it had not been sent, as it treats of Philology and Antiquities.

Sanction was given to an expenditure of Rs. 35 for the purchase of a copper plate inscription found at Ashraffpur in the Dacca district. A description of the plate has been published in the Journal.

It was resolved on the report of the Finance Committee to revert to the old rates of changes for the Journals and Proceedings of the Society, and that circulars of the Bibliotheca Indica publications should be prepared in Urdu, Devanagri and Bengali characters in order to make the works better known to the educated classes.

A paper by Saratchandra Mitra on the "Diseases of Animals in Captivity" was declined with thanks.

A list of the members in arrear of subscription for two years and upwards was ordered to be brought up at the next general meeting of the Society with a view to determine the steps to be taken to recover the amounts, and a Sub-Committee was appointed to consider the question of payment of subscription yearly in advance and the rules regulating procedure in collecting arrears.

The sale of Government Promissory notes for Rs. 2,400 belonging to the Oriental Publication Fund was sanctioned to pay off bills of the Baptist Mission Press.

An estimate amounting to Rs. 178-2-3, approved by the Engineer to the Corporation, for making certain alterations in the drainage of the Society's premises, was sanctioned with reference to a notice received from the Municipality.

The publication of Mr. Hoey's report on the excavations and exhumations at Sahet Mahet in the Banda district was ordered to be undertaken, with reference to an intimation from that gentleman that it was now quite ready.

It was agreed that Captain Sadler should ask Dr. Solf to take up the duties of Philological Secretary in the event of his leaving Calcutta, and that Colonel Waterhouse should take charge of the Journal, Part II, whilst Mr. Sclater was on leave.

*September 25th, Ordinary Meeting.*

A resolution was recorded deploring the very great loss the Asiatic Society of Bengal and Indian Natural Science have sustained by the untimely death of Mr. E. F. T. Atkinson, a former President and Vice-President of the Society; and a copy of the resolution was forwarded to Mrs. Atkinson, with a letter of condolence signed by all the Members of Council.

Bábú Man Mohan Chakravarti was asked to prepare an abstract of his paper on certain inscriptions in the Jaganath temple at Puri, and the great temple of Mahadev at Bhuvaneshwar, of the Orissa kings of the 15th and 16th centuries.

The proceedings of the Sub-Committee appointed to consider the revision of the rule relating to the procedure for collecting arrear subscriptions were circulated to the Members of Council.

*October 30th, Ordinary Meeting.*

Pandit Gunga Dutt Upreti was informed in reply to a letter asking for the aid of the Society to assist him in publishing a work on "Proverbs and Folk-lore of the Provinces of Kumaon and Gharwal" that it was not possible to help him in the matter.

An application from the Société Botanique Bavaroise, Bavaria, for an exchange of publications was declined with thanks.

The thanks of the Council were conveyed to Mr. V. A. Smith for his suggestion to obtain greater punctuality in issuing the Society's Journals, and he was informed that arrangements to that effect were being made.

The report of the Sub-Committee appointed to revise the rules relating to the procedure for collecting arrears of subscriptions and payment of subscriptions annually in advance, was taken into consideration.

*November 27th, Ordinary Meeting.*

Applications from the Museo de la Plata, Buenos Aires, and the Entomological Society of Ontario, for exchange of publications, were referred to the Natural History Committee.

It was decided to discontinue the publication of the Catalogues of Oriental Insecta, which had been issuing as a Supplement to the Journal, Part II.

Read a letter from the Chancellor Imperial and Royal Austro-Hungarian Consulate, Calcutta, forwarding at the request of the Ministry of Foreign Affairs, Vienna, invitations for the second International Ornithological Congress to be held at Budapest in May, 1891.

Permission was given to the Photographic Society of India to store their exhibition pictures in an unused room on the ground floor for a short time whilst the building in which the exhibition is to be held is being got ready.

The Minutes of the Members of Council on a note by the President proposing to invest a sum of Rs. 50,000 out of the Permanent Reserve Fund of the Society in securities bearing a higher rate of interest were taken into consideration, and it was determined to recommend to the Society that the amount should be invested in Municipal or Port Trust Debentures.

The publication of the translation of *Tuzuk-i-Jahangiri*, which had been undertaken by the Rev. W. H. Lowe of Cambridge, was ordered to be stopped, only one fasciculus has been issued.

Intimation was given to the Calcutta Public Library that the presentation of the Society's Journal and Proceedings would be discontinued.

Sanction was accorded to an expenditure of Rs. 30 for preparing an index to the Catalogue of Insecta of the Oriental Region.

*December 18th, Ordinary Meeting.*

Read a letter from the Government of Bengal conveying the cordial



approval of the Lieutenant-Governor to the manner in which the Government grants-in-aid to the Oriental Publication Fund and the Sanskrit Manuscript Fund were applied during the past year.

Bábú Saratchandra Mitra was informed in reply to a letter asking for a list of the copper plate Sanads added to the Society's collection since 1849, that no such list had been prepared, but that the plates would be at his disposal if he became a member of the Society.

An application from Mr. B. N. Dé to undertake a translation of the *Siyar-ul-Mutakerin* for the Bibliotheca Indica was circulated to the Philological Committee.

An application from the Society's servants for the grant of warm clothing for the season was refused.

The Entomological Society of Ontario were asked to furnish a specimen copy of their publications with reference to their offer to place the Asiatic Society on their exchange list.

The application of the Director of the Museo de la Plata, Buenos Aires, for an exchange of publications, was accepted on the recommendation of the Natural History Committee.

The lists of Members in arrear of subscriptions were referred to the Treasurer.

The list of Office-Bearers and Members of Council for 1891 were prepared, ordered to be circulated to Resident Members in accordance with Rule 44.

The translation of the *Riyazu-s-Salatin* was ordered to be stopped the publication of the work not having been commenced.

The Natural History Secretary was authorized to incur an expenditure of Rs. 20 for preparing an index to the first part of the Catalogue of the late Mr. Atkinson of the Insecta of the Oriental Region.

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The Report having been read the PRESIDENT invited the meeting to put any questions or to offer any remarks which any Member might think necessary in connection therewith.

No remarks having been offered the PRESIDENT moved the adoption of the report, and proposed a vote of thanks to the Honorary Secretaries and Treasurer for their exertions in behalf of the Society. The motion was carried unanimously.

The PRESIDENT then delivered an Address.

(The Address has been printed separately from the Proceedings.)

The PRESIDENT announced that the Scrutineers reported the result of the election of Office-Bearers and Members of Council to be as follows :

*President.*

Hon. Sir A. W. Croft, K. C. I. E., M. A.

*Vice-Presidents.*

Rájá Rájendralála Mitra, C. I. E., LL. D.

J. Wood-Mason, Esq.

A. Pedler, Esq., F. C. S.

*Secretaries and Treasurer.*

Dr. A. F. R. Hoernle.

W. L. Sclater, Esq.

C. Little, Esq., B. A.

W. King, Esq., B. A., D. Sc.

*Other Members of Council.*

Dr. J. Scully.

Pandit Haraprasád Shástri, M. A.

Dr. D. D. Cunningham.

Prince Jahán Qadr Muhammad Wáhid Alí Bahádur.

Bábú Gaurdás Bysack.

Dr. A. Crombie.

Bábú Pratápachandra Ghosha, B. A.

C. H. Tawney, Esq., M. A.

L. de Nicéville, Esq., F. E. S.

Colonel H. S. Jarrett.

Dr. Mahendralál Sarkár, C. I. E.

E. C. Cotes, Esq.

The meeting was then resolved into the Ordinary Monthly General Meeting—

HON. SIR A. W. CROFT, President in the Chair.

The Minutes of the last meeting were read and confirmed.

Thirty-four presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :

Hon. Lala Bunbehari Kuppur.

Duncan J. Macpherson, Esq., C. S.



The following gentlemen are candidates for election at the next meeting :

D. C. Baillie, Esq., C. S., Allahabad, proposed by V. A. Smith, Esq., C. S., seconded by J. Hooper, Esq., C. S.

Dr. Aghorechunder Chatterjee, proposed by Rájá Rajendralála Mitra, seconded by Colonel J. Waterhouse.

The following gentlemen have expressed a wish to withdraw from the Society :

J. H. Apjohn, Esq., M. I. C. E.

Thakur Surj Bukhsh Singh.

Lieutenant-Colonel C. R. Macgregor, F. R. G. S.

The SECRETARY reported that election of Captain A. Brame had been cancelled at the request of that gentleman, who intimated that he would be shortly leaving Calcutta, and was quite uncertain when he would return.

The PRESIDENT announced that the proposal of the Council to transfer a sum of Rs. 50,000 belonging to the Society's *Permanent Reserve Fund* from the Government 4 per cent. loan to Municipal or other Debentures bearing a higher rate of interest would now be brought forward for consideration.

The proposal was cordially agreed to.

The following papers were read :—

1. *On thirteen copper plates of King Narsinha Deva, of Orissa.*—By MANMOHAN CHAKRAVARTI.

2. *On two copper plates of King Kulastambha Deva, of the Chalukya dynasty.*—By MAN MOHAN CHAKRAVARTI.

The papers will be published in the Journal, Part I.

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### LIBRARY.

The following additions have been made to the Library since the Meeting held in January last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Angers. La Société d'Études Scientifiques d'Angers,—Bulletin, 1888

Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 84.

Berlin. Berliner Entomologische Zeitschrift,—Band XXXV, Heft 2

- Berlin. Der Königlichen Akademie der Wissenschaften zu Berlin,—  
Abhandlungen, 1889.
- . ———. Sitzungsberichte, XX—XL.
- Brisbane. Queensland Branch of the Royal Geographical Society of  
Australasia,—Proceedings and Transactions, Vol. V, Part 2.
- Calcutta. Geological Survey of India,—Records, Vol. XXIII, Part 4.
- . Indian Engineering,—Vol. IX, Nos. 2—5.
- Edinburgh. The Scottish Geographical Society,—Magazine, Vol. VI,  
Nos. 11 and 12.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin,  
Novembre-Décembre, 1890.
- Helsingfors. Finska Vetenskaps-Societeten,—Bidrag, Häftet 48.
- . ———. Öfversigt, XXXI.
- Jassy. Societății Științifice Și Literare din Iași,—Arhiva, An. II,  
Nos. 3—4<sup>o</sup>.
- London. Anthropological Institute of Great Britain and Ireland,—  
Journal, Vol. XX, No. 2.
- . Nature,—Vol. XLIII, Nos. 1103—1107.
- . Royal Astronomical Society,—Monthly Notices, Vol. L, No.  
9; and Appendix to Vol. L.
- . Royal Geographical Society,—Proceedings, Vol. XII (New  
Series), Nos. 9—12.
- . The Academy,—Nos. 972—976.
- . The Athenæum,—Nos. 3295—3299.
- Mexico. Estados Unidos Mexicanos,—Informes y Documentos relativos  
á Comercio Interior y Exterior Agricultura é Industrias, Nos. 61—  
64.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin,  
No. 2, 1890.
- Naples. La Società Africana D' Italia,—Bollettino, Anno IX, Fasc. 11  
et 12.
- New Haven. American Oriental Society,—Proceedings, October 22nd  
and 23rd, 1890.
- New York. American Museum of Natural History,—Bulletin, Vol.  
III, No. 1; and Pages 117—122 of Vol. III.
- Paris. Du Muséum d' Histoire Naturelle,—Nouvelles Archives, III<sup>e</sup>  
série, Tome I, Fasc. 1 et 2; Tome II, Fasc. 1.
- . Journal Asiatique,—Tome XVI (VIII<sup>e</sup> série), No. 1.
- . La Société D'Anthropologie de Paris,—Bulletins, Tome XII  
(III<sup>e</sup> série), Fasc. 4; Tome XIII (IV<sup>e</sup> série), Fasc. I.
- . La Société de Géographie,—Bulletin, Tome XI, No. 2
- . ———. Compte Rendu des Séances, Nos. 14, 16—17, 1890.

- Paris. La Société Zoologique de France,—Bulletin, Tome XV, Nos. 8 et 9.
- . Musée Guimet,—Revue de L'Histoire des Religions, Tome XXI, Nos. 2 et 3.
- Philadelphia. The Journal of Comparative Medicine and Veterinary Archives,—Vol. XI, No. 12.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno V, Nos. 10 e 11.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIX, Disp. 11<sup>a</sup>.
- Schaffhausen. La Société Entomologique Suisse,—Bulletin, Tome VIII, No. 4.
- St. Petersburg. L' Académie Impériale des Sciences de St. Pétersbourg, Mémoires, Tome XXXVII, Nos. 11—13 ; Tome XXXVIII, No. 1.
- Vienna. Der K. K. Geologischen Reichsanstalt,—Jahrbuch, Band XL, Heft 1 u 2.
- . Des K. K. Naturhistorischen Hofmuseums,—Annalen, Band V, Nr. 4.
- . Der K. K. Zoologisch-botanischen Gesellschaft in Wien,—Verhandlungen, Band XL, Quartal 3—4.
- Washington. United States National Museum,—Bulletin, No. 38.
- . ———. Proceedings, Vol. XII.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- HAECKEL, ERNST. Plankton-Studien. Vergleichende Untersuchungen über die bedeutung und Zusammensetzung der Pelagischen Fauna und Flora. 8vo. Jena, 1890.
- BLANFORD, W. T. The Fauna of British India including Ceylon and Burma. Birds, Vol. II. By Eugene W. Oates. 8vo. London, 1890.

### MISCELLANEOUS PRESENTATIONS.

- Report on the Railway-borne Traffic of the Central Provinces for the official year 1889-90, ending the 31st March, 1890. Fcp. Nagpur, 1890.
- Returns of the Rail-borne Traffic of the Central Provinces during the quarter ending 30th September 1890. Fcp. Nagpur, 1891.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

- Canning and otherwise Preserving Fruits for the Home and Market. By E. M. Shelton (Bulletin, Department of Agriculture, No. 5). 8vo. Brisbane, 1890.

DEPARTMENT OF AGRICULTURE, BRISBANE.

Catalogue of Canadian Plants, Part V. Acrogens. By John Macoun, M. A. 8vo. Montreal, 1890.

List of Canadian Hepaticæ. By Wm. Hy. Pearson. 8vo. Montreal, 1890.

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

Report on the Administration of Bengal, 1889-90. Fcp. Calcutta, 1890.

Report on the River-borne Traffic of the Lower Provinces of Bengal, and on the Inland Trade of Calcutta and on the Trade of Chittagong and the Orissa Ports, for the year 1889-90. Fcp. Calcutta, 1890.

Resolution reviewing the Reports on the working of the District Boards in Bengal, during the year 1889-90. Fcp. Calcutta, 1890.

Returns of the Rail and River-borne Trade of Bengal during the quarter ending the 30th September 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF BENGAL.

Excursions et Reconnaissances Cochinchine Française, Vol. XV, No. 33. 8vo. Hanoi, 1890.

{GOVERNMENT OF FRENCH COCHIN CHINA.

Land and Freshwater Mollusca of India, supplementary to Messrs. Theobald and Hanley's Conchologia Indica, Parts I—VI and Plates. Edited by Lt.-Col. H. H. Godwin-Austen. 8vo. London, 1882-88.

Selections from the Records of the Government of India, Home Department, No. CCLXXV.—Reports on Publications issued and registered in the several Provinces of British India during the year 1889. Fcp. Calcutta, 1890.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Final Report on the Revision of Settlement of the Ludhiana District in the Punjab (1878-83). By T. Gordon Walker, C. S. 8vo. Calcutta, 1884.

Monograph on the Gold and Silver Works of the Punjab, 1888-89. Fcp. Lahore, 1890.

Report on the Administration of the Punjab and its Dependencies for 1889-90. Fcp. Lahore, 1890.

Report on the Settlement of the Barak Tappa of the Teri Tahsil, Kohat District, in the Punjab (1883-87). By Capt. H. P. P. Leigh. Fcp. Lahore, 1889.

GOVERNMENT OF THE PUNJAB.

Annual Report of the Trustees of the Queensland Museum, Brisbane, for the year 1889.

QUEENSLAND MUSEUM, BRISBANE.



Account of the Operations of the Great Trigonometrical Survey of India,  
Vols. XII and XIII. 4to. Dehra Dun, 1890.

General Report on the Operations of the Survey of India Department,  
administered under the Government of India during 1888-89.  
Fcp. Calcutta, 1890.

SURVEYOR GENERAL OF INDIA.

Tide-Tables for the Indian Ports for the year 1891 (also January 1892).  
8vo. London, 1890.

SURVEY OF INDIA, TIDAL AND LEVELLING OPERATIONS, POONA.

### PERIODICALS PURCHASED.

Berlin. Deutsche Litteraturzeitung,—Jahrgang XI, Nrn. 43—48.

———. Zeitschrift für Ethnologie,—Heft. IV, 1890.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und  
verwandter Theile anderer Wissenschaften,—Heft 1, 1888.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 1, and Index to  
Vol. XXV.

Cassel. Botanisches Centralblatt,—Band XLIV, Heft 4—8.

Geneva. Archives des Sciences Physiques et Naturelles,—Tome  
XXIV, No. 12.

Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttingische  
Gelehrte Anzeigen, Nrn. 20—22, 1890.

———. ———. Nachrichten, Nrn. 11 und 12, 1890.

Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 1.

———. ———. Beiblätter, Band XIV, Stück 11 und 12.

———. Literarisches Centralblatt,—Nrn. 44—49, 1890.

Leyden. Internationales Archiv-für Ethnographie,—Band III, Heft  
5.

London. The Annals and Magazine of Natural History,—Vol. XXXV,  
No. 35; Vol. XXXVI, No. 36.

———. The Chemical News,—Vol. LXII, Nos. 1621 and 1622; Vol.  
LXIII, Nos. 1623—1625.

———. The Entomologist,—Vol. XXIII, Nos. 330 and 331.

———. The Entomologist's Monthly Magazine,—Vol. I (2nd Series),  
Nos. 11 and 12.

———. The Journal of Botany,—Vol. XXVIII, Nos. 335 and 336.

———. The London, Edinburgh and Dublin Philosophical Magazine,  
—Vol. XXX (Fifth series), Nos. 186 and 187.

———. The Messenger of Mathematics,—Vol. XX (New Series),  
No. 5.

———. Pali Text Society,—Journal, 1890.



- London. The Quarterly Journal of Microscopical Science,—Vol. XXXI (New Series), Part 4.
- . The Society of Arts,—Journal, Vol. XXXIX, Nos. 1987 and 1988.
- New Haven. The American Journal of Science,—Vol. XL (3<sup>rd</sup> Series), No. 239.
- Paris. L' Académie des Sciences,—Comptes Rendus des Séances, Tome CXI, Nos. 16–21.
- . Annales de Chimie et de Physique,—Tome XXI (6<sup>me</sup> Série), Novembre et Décembre 1890.
- Paris. Journal des Savants,—Octobre et Novembre, 1890.
- . Revue Scientifique,—Tome XLVI, Nos. 25 et 26; Tome XLVII, Nos. 1–3.
- . Revue de Linguistique et de Philologie Comparée,—Tome XXIII, Fasc. 4.
- . Revue Critique d' Histoire et de Littérature,—Tome XXX, Nos. 43–48.
- Vienna. Vienna Oriental Journal,—Vol. IV, No. 4.
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# PROCEEDINGS

OF THE

## ASIATIC SOCIETY OF BENGAL,

FOR MARCH, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th March, 1891, at 9 P. M.

HON'BLE SIR A. W. CROFT, K. C. I. E., M. A., President, in the chair.

The following members were present :—

Dr. D. D. Cunningham, Bábu Sarat Chandra Dás, Rev. H. B. Hyde, Prince Jahán Qadr Muhammad Wáhid Ali Bahádur, Dr. G. King, Dr. W. King, C. Little, Esq., C. J. Lyall, Esq., J. D. Nimmo, Esq., W. L. Selater, Esq., Dr. J. Scully, Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, Colonel J. Waterhouse.

The Minutes of the last meeting were read and confirmed.

Twenty-seven presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :—

D. C. Baillie, Esq., C. S.

Dr. Aghore Chunder Chatterjee.

The following gentleman is a candidate for election at the next meeting :—

E C. S. Baker, Esq., District Superintendent of Police, N. Cachar, proposed by W. L. Selater, Esq., seconded by Dr. W. King.

The following gentlemen have expressed a wish to withdraw from the Society :—

Bábú Govinda Kumár Chaudhuri.

Jagánnath Khanah, Esq.

The PRESIDENT announced that the Council did not propose to take any further steps regarding the revision of the rules brought forward at the meeting in January last.

The SECRETARY read the names of the gentlemen who had been appointed by the Council to serve on the various Committees for the present year.

#### FINANCE AND VISITING COMMITTEE.

|                              |                             |
|------------------------------|-----------------------------|
| Bábú Pratápa Chandra Ghosha. | Pandit Hara Prasád Shástri. |
| Rájá Rájendra Lála Mitra.    | Colonel J. Waterhouse.      |
| Dr. J. Scully.               | J. Wood-Mason, Esq.         |

#### LIBRARY COMMITTEE.

|                              |                                |
|------------------------------|--------------------------------|
| Nawáb Abdul Latif Bahádur.   | Mahámahopádhyáy Pandit Moheśa- |
| Bábú Gaur Dás Bysack.        | chandra Nyáyaratna.            |
| Dr. D. D. Cunningham.        | L. de Nicéville, Esq.          |
| Bábú Pratápa Chandra Ghosha. | Hon. Dr. Mahendra Lál Sarkár.  |
| Prince Jahán Quadr Muhammad  | Dr. J. Scully.                 |
| Wáhid Ali Bahádur.           | Pandit Hara Prasád Shástri.    |
| J. Mann, Esq.                | C. H. Tawney, Esq.             |
| Rájá Rájendra Lála Mitra.    | Colonel J. Waterhouse.         |
| Bábú Asutosh Mukhopádhyáy.   | J. Wood-Mason, Esq.            |

#### PHILOLOGICAL COMMITTEE.

|                               |                               |
|-------------------------------|-------------------------------|
| Nawáb Abdul Latif Bahádur.    | Bábú Nilmani Mukerji.         |
| J. Beames, Esq.               | Mahámahopádhyáy Pandit Moheśa |
| Bábú Gaur Dás Bysack.         | chandra Nyáyaratna.           |
| Dr. A. Führer.                | Captain D. C. Phillott.       |
| G. A. Grierson, Esq.          | Bábú Rajkumár Sarvádrikari.   |
| Bábú Pratápa Chandra Ghosha.  | Sir Sayid Ahmad.              |
| Maulvi Khudá Baksh Khán Bahá- | Hon. Dr. Mahendra Lál Sarkár. |
| dur.                          | Pandit Hara Prasád Shástri.   |
| C. J. Lyall, Esq.             | C. H. Tawney, Esq.            |
| J. Mann, Esq.                 | Captain R. C. Temple.         |
| Rájá Rájendra Lála Mitra.     | Dr. G. Thibaut.               |
| Bábú Bhudeva Mukerji.         |                               |

## COINS COMMITTEE.

|                           |                   |
|---------------------------|-------------------|
| Dr. A. Führer.            | Dr. J. Scully.    |
| Rájá Rájendra Lála Mitra. | V. A. Smith, Esq. |
| J. H. Rivett-Carnac, Esq. |                   |

## HISTORY AND ARCHÆOLOGICAL COMMITTEE.

|                              |                           |
|------------------------------|---------------------------|
| Hon. Justice Amir Ali.       | Mahámahopádhya Kavirája   |
| J. Beames, Esq.              | Shyamaldás.               |
| Bábú Gaur Dás Bysack.        | Rájá Rájendra Lála Mitra. |
| W. H. P. Driver, Esq.        | J. H. Rivett-Carnac, Esq. |
| Dr. A. Führer.               | Captain R. C. Temple.     |
| Bábú Pratápa Chandra Ghosha. | J. Wood-Mason, Esq.       |

## NATURAL HISTORY COMMITTEE.

|                        |                       |
|------------------------|-----------------------|
| Dr. A. W. Alcock.      | L. de Nicéville, Esq. |
| Dr. A. Barclay.        | Dr. Fritz Noetling.   |
| E. C. Cotes, Esq.      | R. D. Oldham, Esq.    |
| Dr. D. D. Cunningham.  | S. E. Peal, Esq.      |
| J. F. Duthie, Esq.     | Dr. J. Scully.        |
| Dr. G. M. Giles.       | Dr. J. H. Tull Walsh. |
| Dr. G. King.           | J. Wood-Mason, Esq.   |
| C. S. Middlemiss, Esq. |                       |

## PHYSICAL SCIENCE COMMITTEE.

|                          |                               |
|--------------------------|-------------------------------|
| Dr. J. R. Adie.          | Bábú Asutosh Mukhopádhyaý.    |
| Dr. A. W. Alcock.        | Dr. Fritz Noetling.           |
| P. N. Bose, Esq.         | R. D. Oldham, Esq.            |
| Bábú Gaur Dás Bysack.    | A. Pedler, Esq.               |
| Dr. D. D. Cunningham.    | Dr. D. Prain.                 |
| J. Eliot, Esq.           | Hon. Dr. Mahendra Lál Sarkár. |
| S. R. Elson, Esq.        | Dr. J. Scully.                |
| Dr. G. M. Giles.         | Dr. W. J. Simpson.            |
| Dr. G. King.             | Col. H. Thuillier.            |
| Rev. Father E. Lafont.   | Colonel J. Waterhouse.        |
| J. J. D. La Touche, Esq. | J. Wood-Mason, Esq.           |
| C. S. Middlemiss, Esq.   |                               |

The PHILOLOGICAL SECRETARY exhibited a photograph of the inscription on the Monument which commemorates the Patna Massacres in October 1763, forwarded by Mr. Beveridge.

Rev. H. B. Hyde stated that he remembered to have noticed in the General Letters from the Court of Directors (series now at the Home



office here), that this Patna monument was erected by the *Council* and that the *Court censured* this expenditure of their money.

The Proposal of the Council to extend the permission given of investing half a lakh of rupees of the Society's *Permanent Reserve Fund* in Municipal or Port Trust Debentures, so as to include the alternative of fixed deposits in Calcutta Banks, was brought forward for consideration.

Mr. Tawney opposed the proposal as, in his opinion, it practically amounted to lending the money of the Society without security.

The Proposal was agreed to.

Dr. J. H. Tull Walsh gave notice of the following proposal, which he intends to bring forward at the next meeting of the Society.

"That with a view to making the meetings of the Society more interesting to individual members, two sections be formed, *A.*—Literature and Archæology, etc., *B.*—Natural Sciences. That these sections have separate evenings for the holding of meetings and for the reading of papers on subjects interesting to the members of the respective sections."

Bábú Sarat Chandra Dás exhibited some old and modern coins of Tibet and read a note on them.

The notes and the coins will be published in the Journal, Part I.

The following papers were read :—

1. *A list of the Butterflies of Engerno, with some remarks on the Demeridae.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

2. *The Butterflies of Sumba.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

3. *On certain Spiders which mimic Ants.*—By DR. J. H. TULL WALSH.

4. *Catalogue of Oriental Diptera.*—By MONS. J. BIGOT. Communicated by the NATURAL HISTORY SECRETARY.

The papers will be published in the Journal, Part II.



## LIBRARY.

The following additions have been made to the Library since the meeting held in February last.

## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

- Berlin. Der Gesellschaft Naturforschender Freunde zu Berlin, 1890.  
 Bombay. The Indian Antiquary,—Vol. XX, Parts 243—44.  
 Budapest. La Société Hongroise de Géographie,—Bulletin, Tome XVIII, Nos. 7—9.  
 Calcutta. Indian Engineering,—Vol. IX, Nos. 6—9, and Index to Vol. VIII.  
 ———. Photographic Society of India,—Journal, Vol. IV, No. 2.  
 Genoa. Museo Civico di Storia Naturale di Genova,—Annali, serie 2<sup>a</sup>, Vols. VII—IX.  
 The Hague. Koninklijk Instituut voor de Taal,- Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen tot de Taal- Land-en Volkenkunde van Nederlandsch-Indië, Deel VI, Aflevering 1.  
 Ithaca. Cornell University,—Library Bulletin, Vol. II, No. 14.  
 Jassy. Societății Științifice Și Literare din Iasi,—Arhiva, Anno II, No. 5.  
 Liège. Société Géologique de Belgique,—Annales, Tome XVI, Nos. 2 et 4.  
 London. Institution of Electrical Engineers,—Journal, Vol. XIX, No. 90.  
 ———. Nature,—Vol. XLIII, Nos. 1108—10.  
 ———. The Academy, Nos. 977—79.  
 ———. The Athenæum, Nos. 3300—2.  
 Mendon, Illinois. The American Antiquarian and Oriental Journal,—Vol. XIII, No. 1,  
 Newport, R. I. Newport Natural History Society,—Proceedings, 1889—90.  
 Paris. La Société de Géographie,—Compte Rendu des Seances, No. 1, 1891.  
 Philadelphia. Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 1.  
 Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno V, No. 13.

Rome La Società Degli Spettroscopisti Italiani,—*Memorie*, Vol. XIX, Disp. 12<sup>a</sup> et Index Tome XIX.

Roorkee. The Indian Forester,—Vol. XVI, Nos. 9—12.

Sydney. Linnean Society of New South Wales,—*Proceedings*, Vol. V, Part, 3.

———. Royal Society of New South Wales,—*Journal and Proceedings*, Vol. XXIV, Part 1.

Stockholm. Société Entomologique de Stockholm,—*Journal Entomologique*, No. 5, 1889; Nos. 1—4, 1890,

Zagreb. Hrvatskoga Arkeologickoga Drutstva,—*Viestnik*, Godina XIII, Br. 1.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

BLOOMFIELD, MAURICE. Contributions to the Interpretation of the Veda, 2nd series (Reprinted from the *Journal of Philology*, Vol. XI, No. 3). 8vo. Baltimore, 1890.

CULIN, STEWART. The I Hing or "Patriotic Rising." A Secret Society among the Chinese in America. 8vo. 1890.

RÁY, PRATÁPA CHANDRA, C. I. E. The Mahabharata, translated into English Prose, Part 64. 8vo. Calcutta, 1891.

### MISCELLANEOUS PRESENTATIONS.

Abstract Account of the treatment and out-turn of the experimental portion of the Government Farm, Nagpur, from 1884-85 to 1889-90. Fcp.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Magnetical and Meteorological Observations made at the Government Observatory, Bombay, in 1888 and 1889. 4to. Bombay, 1890.

COLABA OBSERVATORY.

Report of the Director of the Colombo Museum for 1889. Fcp. Colombo, 1890.

COLOMBO MUSEUM.

Selections from the Records of the Government of India, Home Department, No. CCLXXV.—Reports on Publications issued and registered in the several provinces of British India during the year 1889. Fcp. Calcutta, 1890.

GOVERNMENT OF BENGAL.

The Fauna of British India, including Ceylon and Burma. Reptilia and Batrachia. By George A. Boulenger. 8vo. London, 1890.

The Indian Antiquary, Vol. XX, Part 243, January 1891. 4to. Bombay, 1891.

Memorandum by the Under-Secretary of State for India, relating to the Accounts of the Government of India for 1888-89, and the Estimate for 1889-90 and 1890-91. Fcp. London, 1890.

Report from the Select Committee on East India (Civil Servants); with the Proceedings of the Committee. Fcp. London, 1891.

Statement exhibiting the Moral and Material Progress and Condition of India during the year 1888-89. No. 13. Fcp. London, 1890.

Usha, Part 7. 8vo. Calcutta, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Scientific Results of the Second Yarkand Mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Coleoptera. 4to. Calcutta 1890.

GOVERNMENT OF INDIA, REV. AND AGRI. DEPARTMENT.

Report on the Administration of the N.-W. Provinces and Oudh, for the year ending 31st March 1890. Fcp. Allahabad, 1891.

GOVERNMENT OF N.-W. P. AND OUDH.

Map to accompany the Settlement Report of the Ludhiana District. Sheets.

GOVERNMENT OF THE PUNJAB.

The Laying of the Foundation stone of the Vizianagram Laboratory of the Indian Association for the Cultivation of Science, March, 27th 1890. 8vo. Calcutta, 1890.

Report of the Thirteenth Annual Meeting of the Indian Association for the Cultivation of Science held March 1890. 8vo. Calcutta, 1890.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE.

De Badoej's door Dr. Jul Jacobs en J. J. Meijer. 8vo. Hague, 1891.

KÖNINKLIJK INSTITUUT VOOR DE TAAL,-LAND EN VOLKENKUNDE

VAN NEDERLANDSCH-INDIE, HAGUE.

Inquiry concerning the site of ancient Palibothra. By William Francklin. 4to. London, 1815.

Javaansche Spraakkunst. A volume of plates. 4to. London.

Researches in Assyria, Babylonia, and Chaldæa. By William Ainsworth, F. G. S., F. R. G. S. 8vo. London 1858.

Sanskrit Mahabharat, Parts I—IV (in 2 vols.). 4to. Burdwan, 1862.

BĀBŪ ASUTOSH MUKHAPĀDHYĀY.

Return of Wrecks and Casualties in Indian Waters for the year 1889. Fcp. Calcutta, 1891.

PORT OFFICER, CALCUTTA.

Bulletin of Miscellaneous Information, 1890. 8vo. London, 1890.

ROYAL GARDENS, KEW.



Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in the year 1888. 4to. London, 1890.

ROYAL OBSERVATORY, GREENWICH.

### PERIODICALS PURCHASED.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 2.

Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 1.

Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 2.

———. ————. Beiblätter, Band XV, Stück 1.

London. The Chemical News,—Vol. LXIII, Nos. 1626—28.

Paris. Revue Scientifique,—Tome XLVII, Nos. 4—6.

### BOOKS PURCHASED.

JACQUEMONT, VICTOR. Letters from India; describing a journey in the British Dominions of India, Tibet, Lahore, and Cashmere, during the years 1828—31. 8vo. London, 1834.

RENNELL, JAMES, F. R. S. Memoir of a map of Hindoostan of the Mogal Empire. Edition 1788. 4to. London, 1788.

WILCOCKE, SAMUEL HULL. Voyages to the East-Indies; by the late John Splinter Stavorinus. Translated from the original Dutch. Vols. I—III. 8vo. London, 1798.





PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR APRIL, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st April, 1891, at 9-15 P. M.

A. PEDLER, Esq., F. C. S., Vice-President, in the chair.

The following members were present :—

Bábú Sarat Chandra Dás, P. Donaldson, Esq., Bábú Rajani Kánta Gupta, Dr. A. F. R. Hoernle, Rev. H. B. Hyde, W. H. Jobbins, Esq., Rev. Father E. Lafont, C. Little, Esq., Kumár Rameswár Maliáh, Bábú Asutosh Mukhopádhyáy, T. R. Munro, Esq., L. de Nicéville, Esq., J. D. Nimmo, Esq., W. L. Sclater, Esq., Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Colonel J. Waterhouse.

Visitors :—Dr. K. S. Macdonald, Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

Eighteen presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society was ballotted for and elected an Ordinary Member :—

E. C. S. Baker, Esq.

The following gentleman is a candidate for election at the next meeting :—

C. R. Wilson, Esq., Professor, Presidency College, proposed by A. Pedler, Esq., seconded by C. Little, Esq.

The SECRETARY reported the death of Dr. Otakara Feistmantila, a foreign member of the Society.

The PRESIDENT read a circular from the Royal Society of New South Wales, enumerating prizes to be given for original researches on certain subjects connected with Australia.

Dr. A. F. Rudolf Hoernle again exhibited the old birch bark MS., brought by Lieut. Bower from Kashgaria, and made the following remarks concerning it :

“This MS. was first shown to the Society in November last, in the Proceedings of which month an account of its acquisition by Lieut. Bower is printed. That account appears to have been reprinted in the *Bombay Gazette*, a copy of which accidentally fell into my hands in Aden on my way out to India in March last. It was the first notice I had of it; Major Cumberland, whose companion Lieut. Bower had been on his travels, was a fellow-passenger of mine and gave me corroborative information; all this made me very anxious to see the MS. On my reaching Calcutta I was very glad to find that the MS. was still in the possession of Colonel Waterhouse, who very kindly at once made it over to me for examination.

“The MS. has been with me only a little more than a week, and my examination of it, of course, is not yet finished; but I have already been able to determine several important points; and as hitherto it has been impossible to ascertain anything about the character and contents of the manuscript, I will not delay communicating my information, though further examination may possibly induce me to modify it on some minor points.

“The first point that strikes one on looking through the MS. is, that it appears to be written in three, if not four, different styles. This point has been already noticed in the November account. But what is more,—the difference is not (as may seem at first sight) merely one of careful and slovenly writing, but one of variety of alphabet. The whole manuscript is written in what Mr. Fleet (in his *Gupta Inscriptions* in Volume III of the *Corpus Inscriptionum Indicarum*, p. 3) distinguishes as the Northern class of the Nāgarī alphabet, which is characterised by the peculiar form of the *m*. Of this class, however, three varieties are observable in the MS. The test-letter of these varieties is the palatal ś, which is formed in three different ways. The first of them, with a rounded top, is that commonly used in the Northern Gupta inscriptions; the other two closely approach the form

of the palatal *ś* in the *Sáradá* alphabet of Kashmír. The first variety of writing is shown in the upper portion of Plate VI published in the November Proceedings; and the third variety in the lower portion. Of the second variety—one of great neatness—a specimen is now figured in the lower part of Plate I, which accompanies this account. The upper part of this plate gives another specimen of the first variety. The three varieties have no reference to difference of age, but merely indicate difference of locality. The second and third varieties, as shown by their approach to the *Sáradá* characters, were probably current in the extreme North-West of the great area of the Northern class of alphabets, while the first variety was used in the remainder of that area.

“On examining more closely the several leaves, I noticed that they were evidently mixed up. The leaves written in the different hands followed one another without any order. But I also noticed that many of the leaves were marked with numbers on their left hand margin. Accordingly I cut the string which passed through them and held them together, and arranged them in their proper order, as indicated by their numbers. It then was seen, that 33 leaves, forming the main portion of the MS., followed in consecutive order, and that these 33 leaves were written throughout in the first variety of the alphabet. This variety extended to the obverse of the 33rd leaf; but on the reverse of that leaf commenced the second variety, and went on over five leaves. The remainder of the leaves were written in the third variety.

“It further seemed that the three varieties of writing distinguished three different works, the reasons of which I shall explain presently.

“I now took up the main portion (of 33 leaves), and deciphering the first page of the first leaf, discovered that it contained an introduction, giving the name of the work and detailing its contents. The work is a compendium of medicine, is named the *Návanítaka*, and consists of sixteen chapters (*adhyáya*). That it was written\* by a Buddhist, is seen from the initiatory salutation of the “*Tathágatas*” or Buddhas. But I have not yet succeeded in tracing anywhere the name of its author.

“The following is a transcript and translation of the introduction. It is written in Sanskrit verse (*śloka*). In fact the contents of the whole MS. appear to be composed in *ślokas*.”

\* The form of salutation varies according to the creed of the writer of a MS. The present salutation is, therefore, not strictly evidence as to the creed of the author of the work, but only as to that of the scribe of the MS.

(line 1) नमस्तथागतेभ्यः ।

प्राक्प्रणीतैर्महर्षीणां योगमुख्यैस्समन्वितम् [1]

वक्ष्ये च सिद्धसंकर्षं नाम्ना वै नावनीतकम् ॥ [१॥]

(line 2) नाना व्याधिपरीतानां दृष्टां (\*स्त्रीणां) च यद्वितम् [1]

कुमाराणां हितं यच्च तत्सर्व्वमिह वक्ष्यते ॥

समासरतबुद्धीनां भिषजां प्रीतिवर्द्धनम् [1]

योगवाञ्छिततथापि विस्तरजं मनोनुगम् ॥ [२॥]

अध्यायं चूर्णयोगानां प्रथमं चात्र (line 3) वक्ष्यते [1]

द्वितीयं घृतपानानां तृतीयं तैलसज्जितम् ॥ [३॥]

चतुर्थं मिश्रकं नाम नानाव्याधिचिकित्सितम् [1]

पञ्चमं वस्त्रियोगानां रसायनविधानतः ॥ [४॥] †

(line 4) सप्तमं च यवागूनां दृष्टमष्टममुच्यते [1]

नेत्रांजनानां नवमं दशमं केशरञ्जनम् ॥ [५॥]

अभयाकल्पनामाख्यमैकादशमुच्यते [1]

द्वादशं स्याच्छैलजतोश्चित्र (line 5) कस्य त्रयोदशम् ॥ [६॥]

कुमारभृत्यमप्यत्र स्याच्चातुर्दश† मिष्यते [1]

वन्ध्याचिकित्सिताख्यं च ज्ञेयं पञ्चदशं बुधैः ॥ [७॥]

सुभगाचिकित्सिताख्यं तथा षोडशकं मतम् [1]

इत्येते षोड (line 6) शब्दाया विज्ञेया नावनीतकम् ॥ [८॥]

नेदं दद्यादपुत्राय न चाध्याये कथञ्चन [1]

अशिष्ये प्रस्तावो न स्यात्कर्त्तव्य इति मे मतिः ॥ [९॥]

\* Conjectural ; the leaf is here defective showing only portions of letters.

† There is here a difficulty about the sixth chapter. As the *rasāyana* are a distinct subject from the *vasti*, it seems clear that the word *rasāyana-vidhānataḥ* refers to the sixth chapter. The text may be corrupt, and should probably be read *rasāyana-vidhā tataḥ* i. e., 'next the rules about elixirs,' or perhaps *rasāyana-vidhis = tataḥ*, the word *tataḥ* indicating the sixth chapter.

‡ The two *aksharas* दश are omitted in the MS.



## Translation.\*

‘Salutation to the Tathāgatas.—I am going to write an approved compendium (of medicine), called the Nāvanītaka, based on the excellent system of the Maharshis as composed by them in olden times. Whatever is useful to men and women afflicted with various diseases; whatever is also useful for children, that will all be declared in this book. It will commend itself to those physicians whose minds delight in conciseness; but on account of the multiplicity of its prescriptions, it will also be welcome to those whose minds love many details.

‘The first chapter will give prescriptions of powders; the second of clarified butter; the third will be concerned with oils. The fourth will be about the mixtures which are used in the treatment of various diseases. The fifth will give prescriptions of clysters, the sixth rules about elixirs. The seventh will be about gruels, the eighth about aphrodisiacs, the ninth about eyewashes, the tenth about hair-dyes. The eleventh will be concerned with applications of the yellow myrobalan.† The twelfth will be about bitumen, the thirteenth about castor-oil. The fourteenth will be concerned with the treatment of children; the fifteenth will deal with the treatment of barren women. Lastly the sixteenth will be about the treatment of women who have children. These sixteen chapters will constitute the Nāvanītaka. It should not be given to any one who has no son, nor to any one who has no brother; nor should it be taught to any one who has no disciple.’

“After this commences the first chapter on the *chūrṇas* or powders; it extends down to the obverse of the fourth leaf, where its end is indicated by the words नावनैतके चूषेयोगस्तुमाप्नः । प्रथमोऽध्यायस्तुमाप्नः । i. e., ‘in the Nāvanītaka the prescriptions of powders are finished; the first chapter is finished.’ The following are some of the names of the powders that I have noticed: *varddhamānaka*, *shadyādika*, *tiktaka*, *vrisha-dvādaśaka*, *arishṭa*, etc.

“The second chapter on clarified butter extends to the obverse of the ninth leaf, where we find the remark द्वितीयोऽध्यायः । वलातैलं प्रवक्ष्यामि वानरोगविवर्हेणम् । i. e., ‘(here ends) the second chapter; I shall (now) explain the Valā oil, the cure for rheumatism.’ The following are some of the names of clarified butter; after each name the number of ślokas about it are given: thus *amṛita-prāsa* with 10 ślokas, *kalyāṇaka* with 4, *tiktaka* with 4, *mahātiktaka* with 7, *mṛidvika* with 3, *māyūra* with 7, etc.

\* The translation is tentative. Some of the medical terms are not known to me, nor to those Kavirājs whom I consulted.

† *Abhayā*, I am told by a Kavirāj, is a synonym of *haritakā*. See also Glossary to the Bibliotheca Indica edition of the Aśva Vaidyaka.



“ The third chapter on oils extends to the obverse of the thirteenth leaf, where it ends thus: नावनीतके सिद्धसङ्कर्षे तैलपक्वसूतोयो ऽध्यायः । अतः परं प्रकीर्णकयोगान्वक्ष्यामः, *i. e.*, ‘ (here ends) the third chapter on oils in the approved compendium Nāvanītaka; in the following we shall declare miscellaneous prescriptions.’ The following are some of the kinds of oil spoken of: *valā* oil in 16 ślokas, *amṛita* oil in 25 ślokas, *āsvagandhā* oil, etc.

“ The fourth chapter on mixtures or miscellaneous prescriptions ends on the obverse of the seventeenth leaf, with the words: इति नावनीतके मिश्रको ऽध्यायश्चतुर्थः । अतः परं प्रवक्ष्यामि वलवर्णप्रसादकम् येन हंसा निवर्द्धन्ते वलं चैवापजायन्ते । *i. e.*, ‘ here (ends) the fourth chapter in the Nāvanītaka, (called) Miśraka; in the sequel I am going to declare means of improving vigour and colour, by which good spirits are increased and vigour also is generated.’ Of this chapter I may give the following verses as a specimen :—

भट्टाभट्टान्खिलान्सम्यक्चीरे निर्व्याप्य पीषयेत् ।

वातरक्तप्रदेहसौख्यैर्वा मधुकाश्रितैः ॥ [१ ॥]

शस्तः प्रलेपः सष्टतैश्चगलीचीरगोधुमैः ।

वातरक्तहरं ज्ञेयं प्रधानमिदमौषधम् ॥ [२ ॥]

वातशोणितप्रशमनं योगद्वयं स्त्री २ ॥

सर्पिस्त्रैलं गुडं शुक्तं पञ्चमं विश्वभेषजं ।

पीतमेतद्भवेत्पायस्पर्णं त्रिकशूलनृत् ॥

चित्रकं पिप्पलीमूलं वचा कटुकरोहिणी ।

पाठा वत्सकवीजञ्च हरीतक्यो महौषधम् ॥

*i. e.* (1) ‘ Let thoroughly parched sesamum seed, well sprinkled into thickened milk, be pressed to consistency; or with the same sesamum seed mixed with liquorice a plaster may be made for rheumatism.

(2) Thickened goat’s milk and (flour of) wheat with clarified butter makes an excellent ointment. This may be considered the principal remedy against rheumatism (or gout).

The above are two prescriptions for the curing of rheumatism.

(1) Clarified butter, oil, treacle, vinegar, and, as the fifth, ginger; these, when drunk, are an instant remedy against pains in the lower part of the spine (*i. e.*, against lumbago).

(2) Castor-oil, the root of long pepper, the *vachā*-root, the *Helleborus niger*, the *Stephania Hernandezifolia*, and the seed of *Holarrhena Antidysenterica* and *chebulic myrobalan* are a grand remedy.’

“From the fourth chapter onwards I have not yet been able fully to trace the remaining chapters. On the 24th and 25th leaves I have noticed several names of gruels or *yavágú*, which belong to the seventh chapter.

“On the obverse of the 28th leaf I have noticed the ending of the 8th chapter, thus नावनौतके सिद्धसंकर्षे नानाचार्यमते दृपयोगाः समाप्ताः । *i. e.*, ‘here end the prescriptions of Aphrodisiacs (as set forth) in the approved compendium *Návanítaka* according to the doctrine of various *Ācháryas*.’

“On a subsequent leaf I have noticed portions of the eleventh chapter; and on another the beginnings of the twelfth and thirteenth chapters: thus अथातः शिलाजतुकल्पं व्याख्यास्यामः and अथातस्त्रिचककल्पं व्याख्यामः । *i. e.* ‘here we shall explain the application of bitumen’ and ‘here we explain the application of castor-oil.’

“So far as I can judge for the present, the MS. does not seem to be complete; though I cannot say whether much or little of it is lost.

“As I explained before, this medical work ends on the obverse of a certain leaf; and on the reverse of that leaf commences what appears to be a different work written in the second variety of the alphabet. At the bottom of the obverse of this leaf, marking apparently the end of the medical work, there is a line of writing, in the third variety of the alphabet. It runs thus इत्यत्र श्वेते श्वेतस्याधिपत्ये शतस्याधिकरणे स्वाहा । This would seem to have been added to the MS. by the scribe who wrote the third portion of the MS. I do not understand its meaning.

“The beginning of the second portion of the MS., which commences on the reverse of the leaf just referred to, runs thus:—

नमो नन्दिरद्रेश्चराय—नमो आचार्येभ्यः—नमो ईश्वराय—नमो माणिभद्राय(?)—नमस्तुर्व-  
यक्ष...\*—नमस्तुर्वदेवेभ्यः शिवाय नमः षष्ठौये नमः प्रजापतये नमः रुद्राय नमः नमो  
वैश्रवणाय नमो मरुतानां नमः etc.

“The following is a specimen of the contents of this part of the manuscript. See Plate I, No. II, end of first line.

परिद्धियते ते बुद्धिः.....†

(line 2) आरम्भश्चिन्तितो यस्ते निष्फलः स भविष्यति ॥ शपटः ४४३

व्याधिभिर्भोक्तृसे क्षिप्रं सुखं वा प्राप्स्यसे तथा ।

नात्युच्चं नातिनौचं च फलमासादयिष्यसि—॥ द्वितीयशपटः ॥ (line 3) [४३४]

\* The dots signify illegible *aksharas*.

† The other half of the *śloka* is broken away and lost.

आयसो दृश्यते घोरो येभ्यश्च तव विग्रहः ।

निष्फलं दृश्यते कार्यं पुच्छसे यस्य कारणा—॥ तृतीयशपटः ॥ ३ ४ ४

“ This may be thus translated :

‘1, Thy intelligence is spoiled, ..... Whatever undertaking thou thinkest of, that will be fruitless.

‘2, From diseases thou shalt quickly be delivered ; and happiness thou shalt obtain ; and a result thou shalt enjoy, neither very great nor very small.

‘3, Fearful is sure to be the exertion with those, with whom thou hast a quarrel ; fruitless is sure to be the business of which thou askest the causes.’

“ The whole consists of similar proverbial sayings divided in sets. Thus besides the above three *śāpaṭa*, there are three *māli*, five *bahula*, three *kūṭa*, four *bhadrā*, six *śakti*, six *duṇḍubhi*, three *vrisha*, three *preśhyā*, three *viṭi*, three *karṇṇa*, three *sajā*, three *kāṇa*, three *chunchuṇa*, three *pañji* or *pāñji*, etc. What these terms may mean I do not know.

“ The system of enumeration, however, is curious and noteworthy. The three *śāpaṭa* are indicated by varying the relative position of three numbers: 443, 434, 344. Similarly the six *śakti* are enumerated by the variations of 341 = first, 134 = second, 413 = third, 314 = fourth, 143 = fifth, 431 = sixth.

“ I may here note that the numbers are indicated, through all the three portions of the MS., not by means of numeral figures, but numeral letters. Nor is the modern decimal system of notation used, but the older one which indicated the tens, hundreds, etc. by separate signs ; thus 16 is expressed by the symbols for 10 and 6, 25 by those for 20 and 5, etc.

“ Regarding the third portion of the MS., I can say, for the present but little. It is written in a third variety of the alphabet. It appears to contain charms or prayers, and to be of small interest. But I have not yet been able to examine it more closely. A specimen of it is given in the lower portion of the plate which accompanies the account in the November Proceedings. That specimen reads thus :

line 1, दुन्दुभी - गर्जनौ - वर्षणी - स्फोटनौ - पतनी - पाचनी - चारिणी - कंपनी - मदनौ(?) . . . . . \*

line 2, मे - गोलायाः परिवेलाय वर्षतु देवो समन्तेन - इलि किसि खद्दा (read खद्दा ?) । मैत्री मे धितराद्वेषु (read धृत ?) मैत्री नैरा-

\* The dots signify illegible *aksharas*.

line 3, वणेषु च - विरूपाक्षे मे मैत्री क्षणगीतमक्रेषु च - मणिना नागराज्ञा मे मैत्री वासुकीना-

line 4, मपि - दण्डपादेषु .येषु\* पूर्षभद्रेषु च सदा - नन्दोपनन्दो ये नागा वर्षवन्तो यशस्विनः देवा-

line 5, सुरं पि संग्राममनुभवन्ति सद्धर्धिका - अनवतप्तेन वरुणेन मैत्री संहारकेन च - तच्छकेन अनन्तेन

line 6, तथा वासुमुखेन च - अपराजितेन मे मैत्री मैत्री च्छिवसुतेन च - महात्मन-  
स्विना नित्यं तथैव च












i. e., 'may God rain all over my territory; hail to Ilkisi; my loving trust is in Dhṛitarāshṭra; my loving trust is in Nairāvaṇa (Airāvaṇa ?); in Virūpāksha is my loving trust and in Kṛishṇa Gauṭama; in Maṇi, the king of Nāgas is my loving trust, also in Vāsuki; in Daṇḍapāda, in ? and in Pūrṇabhadra at all times; in Nanda and Upananda, the beautiful and glorious, who most successfully maintain a contest even with the Gods and Asuras; in Anavatapta, in Varuṇa is my loving trust, and in Saṃhāraka; in Tākshaka, Ananta, and further in Vāsumukha; in Aparājita is my loving trust; and my loving trust is in Chhibbasuta (?); and likewise in Mahāmanasvin perpetually.'

"The language of the manuscript is Sanskrit; not, however, the ordinary standard Sanskrit, but that species of ungrammatical Sanskrit, which formerly used to be known by the name of the Gāthā dialect, and which was the language used for literary purposes by the Northern or North-Western Buddhists, outside the schools of Brahmanic learning, in the centuries immediately before and after the commencement of the Christian era. It was a species of Sanskrit which in inflexion, syntax and metrics was not bound by the ordinary rules and usages of Sanskrit Grammar. The awkwardness of the Sanskrit in the introductory verses is noticeable. The word *adhyāya* is used as being of the neuter gender, while in the standard Sanskrit it is masculine. In the second extract we have *piṣhayet* for the regular Sanskrit *peṣhayet*, and, in the colophon quoted above it, the wrong concord *vaṇam upajayante* (singular subject with plural predicate). In the third extract, *parihīyate* stands for *parihīyate* and *kāraṇā* is used as the accusative plural, instead of *kāraṇāni*. In the fourth extract, we have the irregular sandhi *devo samantena* for the ordinary Sanskrit *devaḥ samantena*; again the initial *a* of *anavataptena* and of *aparājitenā* must be dropped or taken as absorbed in the preceding syllable, in order to make the verse (*śloka*) scan; moreover the initial two shorts of



*varuṇena* must be taken to be equivalent to one long, in order to conform the line to the ordinary rules of a śloka; so also in the first half line of the eighth śloka in the first extract, where the two shorts of *subhagá* must be taken as one long. Many more examples of a similar kind might be quoted.

"Now as to the age of the MS., I believe it to be very old and written not later than the end of the 5th century A. D. The style of writing is exactly like that which we meet with in the early Gupta inscriptions, between 450 and 550 A. D. These may best be seen in Mr. Fleet's volume III of the *Corpus Inscriptionum Indicarum*.

"One of the test letters, for the determination of age, of the Nágari alphabet—and the most important one in the present case—is the akshara *ya*. Its original form was ; this changed to  or ; next the left hand loop-line was extended to the point of junction of the perpendicular stroke, . The object of this, of course, was to permit of the letter being written with one continuous movement of the hand. The next step was to dissolve the point of junction, , a natural consequence of quick writing. From this point, the modern form was quickly reached. The whole course of this development is clearly traceable during the period (about 400 to 600 A. D.) of the early Gupta alphabet. The initial forms  and  we find still used throughout in the Allahabad pillar inscription of Samudra Gupta (about 400 A. D., see Fleet, *ibid.*, p. 6), the Udayagiri Cave inscription of Chandra Gupta II (c. 410 A. D., *ibid.*, p. 35), the Bilsad pillar inscription of Kumára Gupta (415 A. D., *ibid.*, p. 45), the Mathurá image inscription of Skanda Gupta (454 A. D., *ibid.*, p. 263), the Bhitari pillar inscription of Skanda Gupta (c. 460 A. D., *ibid.*, p. 53), the Kahaum pillar inscription of Skanda Gupta (460 A. D., *ibid.*, p. 67), etc. The final form  is already used throughout the Bodhgaya inscription of Mahánáman (588 A. D., *ibid.*, p. 274), and in the Asphad stone inscription of Adityasena (c. 650; *ibid.*, p. 202). The intermediate form  is only found in the Indor copper plate inscription of Skanda Gupta, of 465 A. D. (*ibid.*, p. 68), the Mandasor stone inscription of Kumára Gupta, of 473 A. D. (*ibid.*, p. 79), the Majhgawan copperplate inscription of Hastin, of 510 A. D. (*ibid.*, p. 106), and the Jaunpur stone inscription of Íśvaravarman of about 520 A. D. (*ibid.*, p. 228). With regard to this intermediate form it is particularly to be noticed, that it occurs side by side with the older forms  or , and that it is exclusively used with the vowels *e* and *o*. Thus we have it in the Indore plate in *yoyyam* (line 7); again in the Mandasor inscription in *yo* and *priyo* (line 14); again in the Majhgawan plate in *chhreyo* (line 14), *yo* (line 16), *ye* (line 18); again



in the Jaunpur inscription in *anvavāye* (line 2). Now precisely the same practice is noticeable in the main portion of the MS., written in the first variety of the alphabet. The older form is used throughout, except in connection with the vowels *e* and *o*, when the intermediate form is used optionally with the older form. Thus in Plate I, No. I, the intermediate form occurs twice in the 2nd line in *yoga*, and in the 9th line in *kalpayet*. Again in the upper portion of Plate VI of the November Proceedings the intermediate form occurs in the middle of the third line in *lepayet*, and in the beginning of the 6th line in *miśrayet*; also twice in the beginning of the 11th line in *prayojayet*. On the other hand we have the older form in Plate I, No. I, 10th line, *chūrṇṇayet*, and in Plate VI of the November Proceedings, 2nd line, *kalpayet*; and both the older and intermediate forms we have in the same Plate VI, middle of 6th line, *prayojayet*. Once I have noticed the intermediate form with the analogous case of the vowel *ai*, viz., in Plate VI, middle of 4th line, *jīvanīyais = cha*. The inscriptions show that this intermediate form was peculiar to a particular period, the limits of which may be roughly put down as between 470 and 530 A. D. It is not found in any inscription either before or after these dates. And as inscriptions longer conserve archaic forms of writing than manuscripts, that fact further proves that the date of writing the MS. must fall somewhere within that period, that is, about 500 A. D. I have not noticed the intermediate form of *ya* either in the second or in the third portion of the MS. In both these portions, the older forms are used exclusively; and as these portions were certainly written after the first portion, they confirm the conclusion, that the writing of the whole MS. cannot be placed later than 500 A. D.

“As tending to confirm this conclusion, it may be further noted that throughout the MS., wherever there is any occasion to use a number, whether in the body of the work in numbering ślokas, or on the margin of the leaves in numbering the latter, the ancient practice of employing numeral letters is exclusively followed, while numeral figures are never used. What is more,—there is no trace of the knowledge of the modern system of notation with the help of the zero and the value of position; every numeral sign has its own fixed value, independent of the position it may occupy in a series, there being separate signs for the units, the tens, hundreds, etc. Thus ‘twenty-five’ is not expressed by the signs for ‘two’ and ‘five’ (i. e. 25), placed in a certain order, which order imparts the value of ‘twenty’ to the sign for ‘two;’ but it is expressed by two special signs, one for ‘twenty,’ the other for ‘five.’ That the ‘value of position’ was not known to the writer of the second part of the MS., seems

to be clearly shown by his curious system of numbering the several ślokas of a set. Thus the three ślokas of the *śāpaṭa* set are numbered 443, 434 and 344, which does not mean 'four hundred and forty-three,' 'four hundred and thirty-four,' and 'three hundred and forty-four.' This would have no meaning. The position of the figures in the three series imparts no numerical value; 4 means 'four,' and 3 means 'three,' in whatever position they may be. The three series can only be read 'four four three,' 'four three four' and 'three four four;' and the variation in the position of the three unit figures only serves to enumerate three different ślokas. Now the discoveries of the zero and of the value of position may, with much probability, be placed at some time within the sixth century A. D.; and thus the writing of our MS., must be referred to a time, not later than the beginning of that century, or about 500 A. D.

"This, I believe, makes our MS. the oldest Indian written book that is known to exist. There is indeed another MS. which is nearly as old; that is, the so-called Horiuzi MS., published in the *Anecdota Oxoniensia*, Vol. III. But if I understand the case rightly, that MS. consists only of two leaves, and is preserved, not in India, but in Japan. Professor Bühler, who has described it, assigns to it the date of about 550 A. D. The MSS., next in age, are two Nepalese of the Cambridge collection, *viz.*, Add. 1049 and 1702, described in Mr. Bendall's Catalogue, pp. xxxix ff.; and the so-called Bakhshālī MS., described by myself in the *Indian Antiquary*, Vol. XVII, pp. 33ff. It will be observed that both Nepalese MSS. exhibit throughout the modern form of *ya* (though in slightly differing variations) as it became established at the end of the sixth century A. D. As the Bodhgaya inscription of Mahānāman, of 588 A. D., shows throughout the same form of *ya*, it appears to me not impossible that the MS., Add. 1049, dated Samvat 252, which is referred by Mr. Bendall to 857 A. D., may really be placed in 571 A. D. being dated in terms of the Gupta era. Neither the old, nor the intermediate forms of *ya* occur in the Nepalese MSS., while in our MS. these are the only forms that are employed, the modern form being, conspicuous by its entire absence.

"I may note one or two other peculiarities. In the first place, the oldest form of the long vowel *á* is a small horizontal stroke attached to the top of the right side of a consonant. A peculiar modification of this form is the attachment of the stroke to the middle of the right side. This form has, so far as I am aware, hitherto only been noticed in the Allahabad stone pillar inscription of Samudra Gupta, which dates from about 400 A. D., see Fleet, *Corpus Insc. Ind.* Vol. III., p. 4. Compare, *e. g.*, the *akshara* ग of गङ्ग in line 31 of that inscription with the ग of

नागा in line 4 and of संघाम in line 5 of the lower part of Plate VI in the November Proceedings. I have noticed this peculiar form of *á* only in the that portion of the MS., which is written in the third variety of the alphabet.

"In the second place a peculiarity of the style of writing of the period of the early Gupta inscriptions is the practice of appending a final consonant, *i. e.*, a consonant without an inherent vowel, below the line in very small size. In fact this practice is the early substitute of the modern *virāma*. Thus compare the very last word पिवेत् in the bottom line, and the word चोरकम् just three lines above it, in the upper portion of the plate in the November Proceedings, again अन्वितम् and नावनीतकम् in line 1, चूर्षयेत् in line 10 of Plate I, No. I, with the word यथावत् in line 11 of the Bilsad pillar inscription of Kumára Gupta, of 415 A. D. (Fleet, p. 44), or ततोयम् at the end of line 11 of the Kahaum stone pillar inscription of Skanda Gupta, of 460 A. D. (*ibid.*, p. 67), or योगम् at the end of line 9 of the Indore copperplate of Skanda Gupta, of 465 A. D. (*ibid.*, p. 70), or मुख्यम् in line 6 of the Gwaliyor inscription of Mihirakula, of about 515 A. D. (*ibid.*, p. 162), or सिद्धम् in line 1, आध्वरान् in l. 13, भूतयेपात् in l. 17 of the Mandasor inscription of Yaśodharman, of 533 A. D. (*ibid.*, p. 152), or गम् in line 1 of the Jaunpur inscription of Íśvaravarman, of about 520 A. D. (*ibid.*, p. 229). This practice of spelling I have observed throughout every part of the manuscript."

[PS. A fuller account of the MS., and specially of the reasons of dating it so early, I hope shortly to publish.]

The PHILOLOGICAL SECRETARY exhibited 5 Indo-Sassanian and 4 Mughal coins presented to the Society by the Government of Bombay through the Bombay Branch, Royal Asiatic Society.

The PHILOLOGICAL SECRETARY read the following report on a find of Treasure Trove Coins.

Report on four old coins, forwarded by the Secretary to the Government, N.-W. Provinces and Oudh, Financial Department, with his No.  $\frac{3790}{x, 25}$ , dated 3rd June, 1890.

These four coins are stated to form a part of the find which is referred to in my Report of the 9th May 1890.

Three of them belong to precisely the same variety as the four coins, described in that Report. Nor are they in any better state of preservation; and afford no further help in determining the name of the king, who issued them. I may remark, however, that the name



*kritavarman*, as inscribed on the paper, in which the coins were received, is certainly read wrongly. For the reading *varman* there is absolutely no ground on the coins; *kṛita* may be correct; though the letters on the coin look more like *kṛiga*.

The fourth coin belongs to the same class of the so-called later Indo-Scythian coins of the "Kida" type; but to a different variety. The obverse shows, as usual, the standing figure of the king, with *keda* under his left arm; under his right arm are two letters कश *kaśa* or रश *raśa*; on the proper left margin there is a mutilated ष *sha*. The reverse shows the seated form of the goddess, and along the proper left margin श्री चक्ष *S'ri Chachcha* with faint traces of another (probably) conjunct letter. The full legend may have been श्री चक्ष्य *S'ri Chachchasga*, i. e., "of the illustrious (king) Chachcha." The name "Chachcha" appears to me perfectly clear on the coin; and I am disposed to ascribe the coin to the well-known Rāja Chách of Sindh, whose history is related in the Cháchnáma (see Sir H. Elliot's History of India, Vol. I, p. 131). He reigned about 650 A. D.

COLONEL WATERHOUSE exhibited some silver and glass plates showing reversed deposits obtained by passing electric currents through photographic 'developers' containing thio-carbamides and said:—

At the meeting of the Society in August last, I exhibited some specimens of a curious reversal of the photographic image produced by adding small quantities of thio-carbamides or sulpho-ureas to the ordinary eikonogen developer, and showed that although reversal of the image was by no means uncommon, it was usually caused by over-exposure or some other abnormal action of light; whereas to produce these new reversals even less than the ordinary exposure was sufficient, and they appeared to be entirely due to some peculiar action of the thio-carbamide added in very minute quantities to an alkaline eikonogen developer.

At that time I was quite unable to offer any opinion as to the probable cause of these reversals, or as to how they were produced, beyond stating the probability that, although there were many points of difference, they would be found to be in accordance with the generally accepted theory worked out by Capt. Abney, and were due more or less to oxidation or rehalogenisation of the exposed parts of the film, and that owing to the peculiar reducing action of the alkaline thio-carbamides the film during development was practically in the same state as if it were over-exposed. It seemed also probable that sulphur was the active agent in producing the reversals.

Further work with these curious salts and especially with a compound salt of thio-carbamide and ammonium bromide, discovered by Prof. J. E. Reynolds in 1868 and called by him tetrathiocarbamid-ammonium bromide, which was found to be exceedingly active in producing perfect reversals of the image with very short exposures, led me to the belief that this complete change of deposit from the lights to the shadows of the photographic image must be more or less due to electro-chemical action. The subject of electro-chemistry is one of which I have little knowledge, but I have been able to make some simple experiments from which, though not conclusive, it seems probable that my surmise is correct, and so far as they go, they seem to establish that not only, as former observations by Lermontoff, Eder and Abney had shewn to be probable, is the ordinary process of photographic development of sensitive surfaces containing silver haloids, accompanied by electrical action, but that the addition of these minute quantities of thio-carbamides to the developer, greatly increases the intensity of the electrical action and produces a reversal of the current which should also account for the reversal of deposit.

With the aid of a very sensitive galvanometer, which has been kindly lent me by the Rev. Fr. Lafont, S. J., who also assisted me in the experiment, it was found that when a pair of pure silver plates coated with finely precipitated silver bromide, one of which had been exposed to light and the other not, were connected to the galvanometer so as to form a galvanic couple and immersed in the ordinary eikonogen developer, the exposed plate formed the negative pole and the needle was deflected to the left; whilst in the developer containing a little thio-sinamine, the exposed plate formed the positive pole and the needle was deflected to the right.

This experiment has been successfully repeated several times with silver plates prepared in the same way and with other thio-carbamides, also with silver plates bromised by dipping them in bromine water; and so far the occurrence of the reversal is well established. I propose to repeat the experiment before you though I cannot be certain of success. (*The reversal was successfully shewn with bromised plates, the image of the needle and scale being projected on the wall.*)

I have also tried the same experiment with ordinary dry plates rendered conductive in various ways, the best of which appears to be gold leaf applied either on the face of the film or behind it. Gelatine offers very great resistance to the current, and though I have obtained distinct evidence of currents in both directions, they are not always observable, nor is it yet quite certain that they are caused by electrolytic action within the gelatine film, and further investigation as to this is necessary.



I have also found that reversals of the reduction products, somewhat similar to those obtained by photographic methods, may be obtained entirely without the agency of light by passing a current from a single bichromate cell through a pair of silver plates coated with silver bromide and immersed in eikonogen developers prepared with or without thio-carbamides. In this case the plate attached to the carbon pole in the plain developer showed only a very little black deposit, whilst the plate attached to the zinc pole showed a very strong dark deposit all over. A pair of similar plates immersed in some of the same developer to which a few drops of a solution of thio-sinamine had been added showed quite different results, the plate attached to the carbon pole showing a strong black deposit, while the plate attached to the zinc pole was almost clear on the face and free from deposit, showing only a slight tarnish, caused by sulphur. I have some plates of this kind here, though the reversed effect is not quite so strong as it was on my first plates. I have found it difficult to obtain such marked reversals again though I quite believe they are obtainable and the best conditions for securing successful results have yet to be ascertained.

Some similar effects were produced on Eastman's bromide paper and on ordinary dry plate films attached to the silver plates.

Although results obtained with silver bromide on silver plates are not quite comparable with those obtained with ordinary gelatine plates, these experiments show that under favourable circumstances the action of developing solutions on silver bromide is accompanied by distinct electric action, and that these thio-carbamide reversals may be produced by electrical methods and are attended by a reversal of current. How this reversal of current is brought about is not yet quite clear, but seems to be explained by some observations on metallic sulphides, by W. Skey, recorded in Vol. XXIII of the *Chemical News*. He found that sulphides which have the power of conducting can also generate electricity and that silver sulphide is positive to metallic silver. In a battery consisting of a sulphide and a metal in acidulated water, the gas liberated is sulphuretted hydrogen, the nascent hydrogen exerting a desulphurising action upon the metallic sulphide, the ultimate effect of which is in some cases to completely reduce the mineral to the metallic state. He shows also that these sulphides are capable of performing the functions of the negative element of a galvanic couple.

It seems probable, therefore, if electrolytic action does take place in gelatine films during the process of photographic development, that, according to the laws of electrolysis, with the ordinary developers the exposed parts of the plate form the negative pole and attract the metallic elements and hydrogen, while the bromine, or other halogen and

acid radicals, with the hydroxyl go to the unexposed parts forming the positive pole.

On the other hand, with the alkaline thio-carbamide developers, at the same time that silver is reduced on the exposed parts, silver sulphide is formed on the unexposed parts which then become the negative pole and attract the sulphur, the hydrogen and some of the silver from the exposed parts; while the halogen and hydroxyl pass to the positive pole and transform part of the remaining silver into silver haloid which is dissolved in the fixing bath.

Although this theory, as stated in a rough way, seems to agree fairly well with the facts, and from the experiments I have made seems probably the correct explanation of the reversals, I do not feel myself yet able to put it forward authoritatively, and a great deal of further investigation is required. The subject is a very difficult one beset with uncertainties, and requires more time and close attention than I have been able to give for working it out fully.

The theory that photographic action is accompanied by electrical phenomena is no new one. Becquerel found that if silver plates coated with silver bromide or other haloid silver salts were electrically connected and immersed in dilute acid, and light was allowed to fall upon one plate while the other was screened, the effect of the light was marked by distinct electrical action capable of deflecting the needle of a galvanometer. Prof. Minchin has recently found that the same effect is produced on silver plates coated with silver haloids in emulsions of gelatine or collodion, and immersed in very dilute solutions of alkaline bromides, iodides or chlorides. He has also found that if silver plates coated with a silver bromide emulsion in gelatine are attached to the poles of a battery, and half immersed in a weak solution of potassium bromide, the film attached to the carbon pole was visibly blackened on its immersed part, while no visible effect was produced on the other, but on developing this plate with pyrogallie acid and ammonia, its immersed part also became dark, exactly as if it had been exposed to light for a few seconds.

There is a good deal of other more or less direct evidence that an electrolytic action takes place during development, although so far as I can ascertain no observations of the currents with a galvanometer are recorded. Comparatively little attention has, however, been given to the question, and electrical or electrochemical action has never been looked upon as a principal factor in the production of the photographic image. From these new results it would appear that, at any rate as regards the silver haloids, the formation and development of the photographic image is to a very great extent influenced by electrical action,

if not actually caused by it. It has lately been found that electro-chemical reactions have explained many obscure points in ordinary chemistry, and it seems likely therefore that further investigation of photographic action by the light of the most recent electro-chemical theories would also throw light on much that is now obscure and uncertain as regards the formation and development of the invisible photographic image. Prof. Meldola in his "*Chemistry of Photography*" notes these micro-electrical phenomena in photography as subjects for further investigation, and I hope these experiments may prove a useful contribution to the investigation.

Bábú SARAT CHANDRA DÁS exhibited and read a short note on a drawing of the Paradise of the Northern Buddhists called De-wa-chan in Tibetan and "Sukhávati" in Sanskrit. (With a plate).

*A Short note on the Paradise of the Northern Buddhists.*

The inscription on the top of this Tibetan drawing of "Sukhávati" the paradise of the northern Buddhists is, in the rectangular form of the Sanskrit character of the 6th—7th century A. D. Transliterated into Roman character, it stands thus :—

Sukhávati hí śín ōkod tshe phyi mañi

\*Mthoñ var byed-pa shes bya-va.

"The design of Sukhávati world called 'the prospective of future existence.'"

This imaginary world, believed by the Buddhists of the Maháyána school to be a reality, lies far to the west beyond numberless worlds. In physical aspect, general character &c., it is said to resemble this world of ours, but the great law of procreation which is the prime cause of all that have life in this world does not prevail in Sukhávati. There all living beings are born, not from the effect of their former deeds, but in consequence of their moral merits and prayers. A pious Buddhist of this world prays, for being born into Sukhávati. When at the time of his death he sees, the Buddha and his sainted followers either in sleep or in wakeful dreams, he is sure to be born in Sukhávati. His soul instantaneously travels many millions of miles westward and enters a lotus blossom which serves him for a womb. In course of time he grows out of the lotus flower and develops into a full grown man. He is found endowed with the power of comprehension, meditation and foreknowledge, and is soon able to work miracles. Women

\* The italics are silent.



have no place there and the agency of the sexes is altogether unknown in Sukhāvātī. Indeed *kāma* that faculty of procreation which is, the cause of all worldly miseries, according to the Buddhists does not at all exist there. In this paradise *Amitābha* the Buddha of immeasurable light rules supreme in love. Avalokitesvara Bodhisattva, with a lotus in his hand sits to the right and Vajra Pāṇi has his seat on the left. Two rays of divine light emanating from the heart of the Supreme Buddha, travel east- and west-ward, touching a saintly Lama and a Buddha who has attained perfection, and will not go back to the world. This Lama in the present *kalpa* is the grand Lama of Tashilhunpo whose spirit is in Sukhāvātī, but who of his own free-will chooses, for the good of all living beings of this world, to reside in flesh in the holy land of Tibet.

The Buddha's place is taken by successive arrivals. Fine trees, lovely flowers, fragrant shrubs abound in Sukhāvātī. Birds of richest hues and plumage and sweetest notes fly, freely in Sukhāvātī. The beasts of forests roam at large without doing mischief to each other. The woods resound with the chorus of divine music. In that blessed land there is no distinction between the day and the night. The gods, whose robes serve them for wings, approach the supreme Buddha from all directions with wreathes of plomers, crowns of gems, jewelled umbrellas and flags in their hands. They and the Bodhisattvas wait round him like Parnett's saints—"With harps of gold, with boughs of ever green. With robes of white, the pious throngs are seen; Exalted anthems all their hours employ. And all is music and excess of joy." Divine lustre—halos of light emanating from the persons of the saints and Buddhas keep all nature illumined. The hard soil becomes soft and yields to the feet, and the soft earth grows hard when the mind wishes for it.

There the food of contemplation furnishes nourishment to the residents of Sukhāvātī. Their wealth consists of love and enjoyment, of meditation, their vestments are self grown on their person nor have they shame to cover. It is a land which is free from lust, envy, rage, ignorance and stupidity.

Once born there, one does not transmigrate elsewhere, but goes on ascending to the stages of sainthood. He is liberated from the effects of *karma*. The gods who in this world are subject to fall at the exhaustion of their moral merits—may by dint of prayers have their births in Sukhāvātī—and draw near Amitābha guided by his light. I here extract a few lines from the *Dhāraṇī* called "the drum-sound of immortality."



འདི་ནས་ནུབ་གྱི་ཕྱོགས་རེལ་ན།  
 བདེ་བ་ཅན་གྱི་འཛིག་རྟེན་ཁས་ས།  
 དེ་ན་རྫོགས་པའི་སངས་གྲུས་བཞུགས།  
 དེ་བཞིན་གཤེགས་པ་འོད་དཔག་མེད།  
 སུ་ཞིག་དེའི་མཚན་བརྗོད་ན།  
 དེ་ནི་དེ་ཅུ་སྟེ་བར་འགྱུར།  
 འཆི་བའི་དུས་སུ་སྟོན་པ་ནི།  
 དག་སྦྱོང་དག་འདུན་བཅས་ཏེ་མཐོང་།  
 དེ་ན་བྱད་མེད་ཡོད་མ་ཡིན།  
 མངལ་ན་གནས་པ་ཡོད་མ་ཡིན།  
 རིན་ཆེན་ནོམས་གྱི་བད་མོ་ལས།  
 རྩོམ་འབྲུལ་ཆེན་པོ་འབྱུང་བར་འགྱུར།  
 ཟས་དང་གོས་དང་སྤྲན་ནོམས་དང་།  
 ཆོས་གོས་མལ་ཆ་རྒྱུང་བཟེད་ནོམས།  
 སེམས་གྱི་བསམས་མ་ཐག་དུ་ནི།  
 དེ་དག་མེད་ལ་འབྱུང་བར་འགྱུར།  
 ཕྱོགས་བཅུར་བཞུགས་པའི་སངས་གྲུས་ནོམས།  
 བདེ་བ་ཅན་གྱི་བསྐྱེད་པ་བརྗོད།

\* \* \* \* \*

ནོམ་དག་ཞིང་དུ་སྟེ་བར་འགྱུར།

(འཆི་མེད་ཇི་སྒྲིའི་གཞུགས་ལས་)

Far to the west lies De-va-chan,\*  
 That happy land of Buddhist bliss ;  
 Where reigns the saintly sovereign,  
 Amitábha, of Light—boundless.  
 Who e'er His name in faith implores,  
 On re-birth gains that blessed land ;  
 His dying eyes shall see the Lord—  
 The Teacher and his priestly band.  
 No women there, nor fleshly birth ;  
 But from a diamond lotus flower  
 Bursts blooming forth the new born soul.  
 In the glorious company of  
 Amitábha our needs are few,  
 But food and drink and raiment rare  
 And alms-bowl all appear when wished.  
 The Buddhas of the quarters ten  
 Unite in praise of De-va-chan ;  
 Our prayer hence will e'er be this  
 "To be born in that Paradise."

N. B.—Buddha, Amitábha and Amitáyusa are the different manifestations of the same spiritual entity.

COL. J. WATERHOUSE submitted a communication from Mr. W. McCarren, Manager of the Arakan Oil Company's works, Kyouk Phyo, and said :—

At the August meeting, after the reading of Col. Mainwaring's paper on his new theory of the Barisal Guns I remarked that on reading a paper by Prof. Redwood on the Oil-wells of India, which was published last year in the *Journal of the Society for Chemical Industry*, and in which mention was made of gas explosions occurring in the Islands of Cheduba and Ramree from the mud volcanoes, it seemed not impossible that with favourable conditions of wind and atmosphere the sound of these explosions if loud enough might be carried across the Bay of Bengal so as to be heard in the localities where the Barisal Guns are heard.

On looking up a paper in Vol. XI of the *Records of the Geological Survey of India*, by Mr. Mallett on "the Mud Volcanoes of Ramri and Cheduba," referred to by Prof. Redwood, I found it stated that these explosions of gas were said by the natives to be most frequent in the rainy season.

\* De-va-chan is the Tibetan of Sukhávati.

It struck me, therefore, that the question might at any rate be worth enquiring into, and as I found that the Arakan Oil Company's works were established at Kyouk Phyou, on the island of Ramri, I asked my friend Mr. J. D. Maxwell, of Messrs. Kettlewell, Bullen and Co., the managing agents of the Company, to forward some questions on the subject to Mr. W. McCarren the manager of the works. This he kindly did, and I lately received the following note by Mr. McCarren, from which it will be seen that although the gas explosions referred to cannot possibly be the source of the sounds known as the Barisal Guns, the fact of similar sounds being heard on the Island as coming from the west at the commencement and end of the monsoon is interesting, and points to the sea as being in some way the place of origin of the sounds.

It may also be remarked that Prof. Pedler has very kindly had prepared for me some charts showing the direction of the winds at the head of the Bay during the Monsoon months, and from these it would appear that the winds are favourable to sounds being carried across from the Ramri Islands to the Sunderbunds, supposing that they were sufficiently loud.

The further information Mr. McCarren has kindly promised will be of interest, and the Society is much indebted to him for the trouble he has taken in the matter.

*Note by Mr. W. McCarren.*

1. Do explosions of gas occur from the mud volcanoes or from the petroleum wells in the islands of Ramri, Cheduba and the Borongas?

Explosions of gas occur from the mud volcanoes of Ramri and Cheduba but not from the petroleum wells.

2. If so, at what season of the year are they most frequent and are they accompanied by much noise, loud enough to be heard at a considerable distance?

There is only one volcano on these islands that has explosions of gas accompanied with much noise and flame. This volcano is in Cheduba and explodes once in every 6 to 8 months. I have heard the sound (which was not very loud) of the explosion at Kyouk Phyou 40 miles north of the volcano. I have made enquiries at Akyab 100 miles north of the volcano, no one living there (Akyab) that I could find ever heard the sound of any explosion of the Cheduba volcano, although numbers have seen the flames of the eruptions which generally during the time (7 years) I have been here, have taken place at night time.

3. What is the direction of the prevailing wind at the time when the explosions are the most frequent?

The wind was blowing from the N. W. when the last explosion occurred.

4. Is the noise accompanying them sufficiently loud to be heard at a great distance; and is it possible that it could be heard on the other side of the Bay of Bengal?

From enquiries I have made, and the number of times I have heard the noise accompanying the explosion, I do not think the sound could be heard at over 70 miles.

The natives here tell me that in April and May near the commencement of the rains they hear three or four very loud reports coming from the west, *i. e.*, the sea. That these reports are entirely different from the sounds produced by the surf on the coast, and are like the reports from the firing off of cannon. That in August and September near the end of the rains they hear the same sort of sounds which are again three or four in number,—that during no other time of the year do they hear these sounds. They of course cannot tell what are the causes of these reports, but they think they are in connection with the beginning and ending of the rains.

I have made arrangements with the headmen of the different villages along the coast, that when they hear these reports this year to come and give me the particulars. I will be on the *qui vive* myself and trust I will be able to get the exact date of each report.

The following paper was read:—

1. *Materials for a Flora of the Malayan Peninsula*, No. 3. By GEORGE KING, M. B., LL. D., F. R. S., F. L. S., *Superintendent of the Royal Botanic Garden, Calcutta.*

The paper will be published in the Journal, Part II.

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### LIBRARY.

The following additions have been made to the Library since the meeting held in March last.

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### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Baltimore. Johns Hopkins University,—Circulars, Vol. X, No. 85.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—  
Notulen, Deel XXVIII, Aflevering 3.



- Boston. Boston Society of Natural History,—Memoirs, Vol. IV, Nos. 7—9.
- . ———. Proceedings, Vol. XXIV, Parts 3 and 4.
- Budapest. La Société Hongroise de Géographie,—Bulletin, Tome XIX, Fasc. 1 et 2.
- Calcutta. Geological Survey of India,—Memoirs, Vol. XXIV, Part 3.
- . Indian Engineering,—Vol. IX, Nos. 10—13.
- . Photographic Society of India,—Journal, Vol. IV, No. 3.
- Colombo. Ceylon Branch of the Royal Asiatic Society,—Journal, Vol. X, No. 37.
- Florence. La Società Africana d' Italia,—Bullettino, Tome VI, Fasc. 7<sup>o</sup>.e 8<sup>o</sup>.
- Havre. Société de Géographie Commerciale du Havre,—Annuaire, Janvier, 1891.
- Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLIV, Heft 4.
- London. Geological Society,—Quarterly Journal, Vol. XLVII, Part 1.
- . Institution of Electrical Engineers,—Journal, Vol. XX, No 91, and Index to Vol. XIX.
- . ———. List of Officers and Members, corrected to January 31st, 1891.
- . Nature,—Vol. XLIII, Nos., 1111—15.
- London. The Academy,—Nos. 971, 980—984.
- . The Athenæum,—Nos. 3303-4, 3306-7.
- Manchester. Manchester Literary and Philosophical Society,—Memoirs and Proceedings, Vol. IV (4th series), No. 2.
- Mexico. La Sociedad Científica “Antonio Alzate,”—Memorias, Tomo IV, Nos. 3 et 4.
- Naples. La Società Africana d' Italia,—Bollettino, Anno X, Fasc. 1—2.
- Paris. La Société de Géographie,—Bulletin, Tome XI, No. 4.
- . ———. Compte Rendu des Séances, Nos. 2—5, 1891.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 1; Index, Anno V.
- Rome. La Società Degli Spettroscopisti Italiani,—Memoire, Tome XX, Disp 1<sup>a</sup>.
- Roorkee. The Indian Forester,—Vol. XVII, Nos. 1—3.
- Taiping. Government of Perak,—The Perak Government Gazette, Vol. IV, No. 5.
- Tōkyō. Asiatic Society of Japan,—Transactions, Vol. XVIII, Part 2.
- . Kaiserlich-Japanischen Universität,—Mitteilungen aus der Medicinischen Facultät, Band I, No. 4.
- Trieste. Museo Civico di Storia Naturale di Trieste,—Atti, VIII.

Turin. La R. Accademia delle Scienze di Torino,—Atti, Tome XXVI, Disp. 1<sup>a</sup>—3<sup>a</sup>.

Vienna. Der K. K. Geologischen Reichsanstalt,—Verhandlungen, Nrn. 14—18, 1890; Nr. 1, 1891.

Yokohama. Der Deutschen Gesellschaft für Natur und Völkerkunde Ostasiens in Tokio,—Mittheilungen, 45 Heft.

### BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

ADITYARÁMJI, KESHAVLÁL AND LAXMIDÁSS. Sangeetáditya, Part I. By Shástri Adityarámji. 8vo. Bombay, 1889.

MITRA, VIHÁRILÁLA. The Yoga-Vásishtha-Mahárámayana of Válmiki, translated from the original sanskrit, Vol. I. 8vo. Calcutta, 1891.

STORER, HORATIO R., M. D. The Medals of Benjamin Rush, Obstetrician. 8vo. Chicago, 1889.

———. The Medals, Jetons and Tokens illustrative of Obstetrics and Gynæcology. 8vo. 1887.

### MISCELLANEOUS PRESENTATIONS.

Proeve van een Lampongsch-Hollandsche Woordenlijst, bepaaldelijk voor het dialect van Kroë, door O. L. Helfrich (Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen, Deel XLV, 3<sup>e</sup> stuk). 8vo. Batavia, 1891.

Verzameling Lampongsche Teksten, getranscribeerd onder toezicht van O. L. Helfrich (Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen, Deel XLV, 4<sup>e</sup> stuk). 8vo. Batavia, 1891.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN,

BATAVIA.

Botany: Contributions to the Queensland Flora. By F. M. Bailey, F. L. S. (Bulletin, Department of Agriculture, Brisbane, No. 4). 8vo. Brisbane, 1890.

Tobacco: Its Cultivation in Northern Queensland. By S. Lamb (Bulletin, Department of Agriculture, Brisbane, No. 6). 8vo. Brisbane, 1890.

DEPARTMENT OF AGRICULTURE, BRISBANE.

Contents and Index of the First Twenty Volumes of the Records of the Geological Survey of India, 1868 to 1887. 8vo. Calcutta, 1891.

GEOLOGICAL SURVEY OF INDIA.

The Indian Antiquary, Vol. XX, Part 244, February, 1891. 4to. Bombay, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Annual Administration Reports of the Forest Department (Southern and Northern Circles), Madras Presidency, for the official year 1889-90. Fep. Madras, 1890.

Mr. A. Rea's Report on the Archæological Survey of Southern India during the last quarter of 1890. Fep. Madras, 1891.

GOVERNMENT OF MADRAS.

A Catalogue of the Mantodea, with descriptions of new genera and species, and an enumeration of the specimens, in the collection of the Indian Museum, Calcutta. By J. Wood-Mason. 8vo. Calcutta, 1891.

INDIAN MUSEUM.

Den Norske Nordhavs-Expedition, 1876-1878. XX, Zoologi. Pycnogonidea ved G. O. Sars. 4to. Christiania, 1891.

DEN NORSKE NORDHAVS-EXPEDITION, CHRISTIANIA.

Catalogue of Notices to Mariners issued during the year 1890. 8vo. Calcutta, 1891.

PORT OFFICER, CALCUTTA.

Scientific Memoirs by Medical Officers of the Army of India. Edited by W. R. Rice, Esq., M. D. Part VI, 1891. 4to. Calcutta, 1891.

SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

North American Fauna, No. 3. Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona. By Dr. C. Hart Merriam. 8vo. Washington, 1890.

North American Fauna, No. 4. Descriptions of twenty-six new species of North American Mammals. By Dr. C. Hart Merriam. 8vo. Washington, 1890.

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON.

PERIODICALS PURCHASED.

Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 3.

Genéva. Archives des Sciences Physiques et Naturelles,—Tome XXV, No. 2.

Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 3.

London. The Chemical News,—Vol. LXIII, Nos. 1629—33.


Paris. Revue Scientifique,—Tome XLVII, Nos. 7—11.

BOOKS PURCHASED,

PETERSON, PETER. The Paddhati of Sarngadhara. A sanskrit anthology. Vol. I, Text (Bombay Sanskrit Series, No. XXXVII). 8vo. Bombay, 1888.

POOLE, REGINALD STUART. Catalogue of Coins of the Sháhs of Persia in the British Museum. The Coins of the Sháhs of Persia, Şafavis, Afgháns, Efsháris, Zands, and Kájárs. 8vo. London, 1887.

— . Catalogue of Indian Coins in the British Museum (The Muhammadan States). The Coins of the Muhammadan States of India in the British Museum. By Stanley Lane-Poole. 8vo. London, 1885.







No. I.

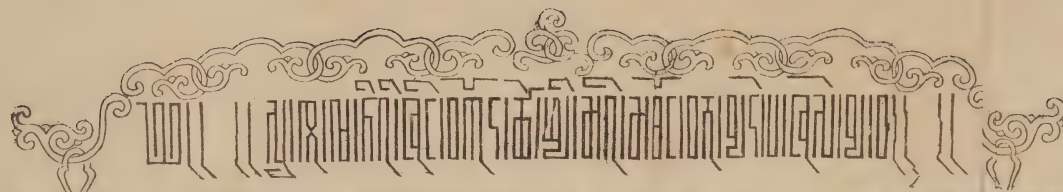
This image shows a single leaf of a birch-bark manuscript. It contains approximately 12 lines of text written in a cursive script. The script is dark and contrasts with the lighter, textured bark. The leaf is oriented horizontally and shows some signs of age, including slight discoloration and wear along the edges.

No. II.

This image shows a second leaf of a birch-bark manuscript, similar to the first. It also contains approximately 12 lines of text in the same cursive script. The leaf is oriented horizontally and shows signs of age and wear, with some discoloration and slight damage to the bark surface.





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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR MAY, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 6th May, 1891, at 9-15 p. m.

J. WOOD-MASON, Esq., Vice-President, in the chair.

The following members were present :—

Nawáb Abdul Latíf, Bahádur, Rev. H. B. Hyde, Dr. W. King, Rev. Fr. E. Lafont, T. H. D. La Touche, Esq., C. Little, Esq., Kumár Rameswár Maliáh, T. R. Munro, Esq., L. de Nicéville, Esq., R. D. Oldham, Esq., W. L. Selater, Esq.

Visitors : D. Munro, Esq., Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

Nineteen presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was ballotted for and elected an Ordinary Member :—

C. R. Wilson, Esq.

The following gentlemen are candidates for election at the next meeting :—

Rev. D. G. Lathom-Browne, Chaplain, Port Blair, Andamans, proposed by Dr. G. King, seconded by Dr. D. Prain.

F. A. Shillingford, Esq., Kolassy Factory, Purneah, proposed by C. Little, Esq., seconded by Dr. A. F. R. Hoernle.

The following gentleman has expressed a wish to withdraw from the Society:—

C. A. Samuells, Esq., C. S.

The PRESIDENT stated that the votes of the members on the proposed investment of Rs. 50,000 of the Society's *Permanent Reserve Fund*, reported at the meeting in February last, would now be taken, and appointed Dr. W. King and Mr. T. R. Munro to be scrutineers, who reported the result as follows:—

|          |     | <i>For</i> | <i>Against</i> | <i>Result.</i> |
|----------|-----|------------|----------------|----------------|
| Proposal | I   | 76         | 6              | Carried.       |
| Do.      | II  | 18         | 64             | Rejected.      |
| Do.      | III | 5          | 77             | Rejected.      |
| Do.      | IV  | 53         | 29             | Rejected.      |

The SECRETARY stated that it was resolved in the last meeting of Council, in the event of Proposal IV not being carried, that one proposal only should be laid before the members, as, with the large majority required by the rules of the Society, it is difficult to obtain a satisfactory result when so many proposals are before the members at once. The permission of the meeting was therefore asked with a view to a re-circulation of Proposal II, *viz.*, that the sum of Rs. 50,000 should be invested in Municipal Debentures.

Permission was granted.

The PRESIDENT read a letter from the Committee of Organization, Fifth International Congress of Geologists, Washington, inviting attention to a circular respecting the next meeting of the International Congress of Geologists and requesting to bring its contents to the notice of the Council and members of the Society.

The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins:—

I. Report on 10 silver coins forwarded by the Deputy Commissioner of the Akola District with his No. 3294, dated 26th May, 1890.

The coins are stated to have been found near the village Umra Attali in the Khamgaon Taluk of the Akola district, whilst excavating for the building of a wall for a temple. Altogether 462 coins are stated to have been found, of which ten were sent as samples for identification.

They are Rupees of Sháh 'Álam, of native mintage, and are of no numismatic value. They have been sent to the mint to be melted down.

II. Report on 29 "so-called Alamsháhi Rupees" forwarded by the

Deputy Commissioner of Hoshangabad with his No. 4555, dated the 6th September, 1890.

The coins are stated to have been found on the 10th May 1889 in the village of Rámpúr in Seoni Tahsil in the Hoshangabad district, and to be "so-called Alamsháhi Rupees."

As a matter of fact, they are Rupees of the following Mughal emperors of Delhi:

|                  |              |
|------------------|--------------|
| 1, Sháh Jahán    | 3 specimens. |
| 2, Aurangzíb     | 6    "       |
| 3, Aḥmad Sháh    | 1    "       |
| 4, Farukhsiyar   | 2    "       |
| 5, Muḥammad Sháh | 8    "       |
| 6, 'Álamgír II   | 1    "       |
| 7, 'Álam Sháh    | 8    "       |
| <hr/>            |              |
| Total            | 29    "      |
| <hr/>            |              |

These Rupees are all of very common kinds and moreover in indifferent condition. They have been sent to the mint to be melted down.

III. Report on 5 coins forwarded by the Offg. Collector of Durbhanga with his No. 687G, dated 9th September, 1890.

The find place of these coins is not stated in the Collector's letter. It would be well, if this item of information were always supplied.

All the five coins are Rupees of 'Álam Sháh's reign, dated "San 19 Mint Murshidábád," but of English mintage.

They are of no numismatic value, and have been sent to the mint to be melted down.

IV. Report, on 82 silver coins, forwarded by the Deputy Commissioner of Dharmsala, Kangra District, with his No. 1680 of the 17th October 1890.

These coins appear to belong to a set of 101 coins which were found buried by a roadside in the Hamírpur Tahsíl of the Kángra District; they were dug up in the course of road-making in March 1873. A few pieces were sent in April following to the Provincial Museum—I presume, in Lahore; and nine specimens would appear to have been taken by the District officers in 1874 with a view to enquiry. The remainder—apparently the 82 specimens now sent for determination—seem to have been deposited in the store room of the district office, where they were re-discovered in October last, and forwarded to the Asiatic Society of Bengal. Owing to my absence from Calcutta on



farlough, they could not be determined till now. Of the 82 coins sent down, 79 were whole, and 3 broken.

All the 82 specimens are of one kind, and belong to the class, commonly called "Indo-Sassanian." They are described and figured in Prinsep's *Indian Antiquities* (ed. Thomas), Vol. I, p. 407, Plate XXXIII, figs. 9, 14. Coins of this description have been found, at various times and in different localities, in large numbers. All collections are well supplied with them. They have been sent to the mint to be melted down.

Rev. H. B. HYDE exhibited a transcript of the Original Returns of Baptisms, Marriages and Burials received from Calcutta by the Court of Directors between 1713 and 1754.

He said :—The Original Registers of the Presidency Church were destroyed in 1756 and since then until these transcripts were received last month, it has perhaps been quite unknown in Calcutta that such duplicates now copied were in existence. These transcripts are to be lodged in the Registry of St. John's Church.

The following papers were read :—

1. *New and Rare Indian Lycænidæ.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

2. *The Butterflies of Sumba and Sambawa with some account of the Island of Sumba.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

3. *Natural History Notes from H. M.'s Indian Marine Survey Steamer "Investigator,"* Commander R. F. HOSKYN, R. N. commanding. No. 24.—*List of Deep-Sea Holothurians collected during the seasons 1887 to 1891 with descriptions of new species.*—By DR. J. H. TULL WALSH. Communicated by the SUPERINTENDENT OF THE INDIAN MUSEUM.

4. *On an undescribed Oriental species of Nepeta.*—By D. PRAIN.

5. *Noviciæ Indicæ. IV. Two additional species of Glyptopetalum.*—By D. PRAIN.

These papers will be published in the Journal, Part II.

6. *On the present condition of Barren Island.*—By D. PRAIN.

Barren Island has been so often described that there is little left to say concerning its physical condition. In his exhaustive account of the island (*Memoirs of the Geological Survey of India*, xxi, part 4) Mr. Mallet has, however, suggested (*l. c.*, p. 30) that future visitors should note "the temperature of the hot spring" at the landing place and "the thickness of the fresh and undisturbed sulphur-crusts." This the writer, owing to the kindness of Col. T. Cadell, v. c., Chief Commissioner of the Andamans, had an opportunity of doing in April 1891.

The column of steam from the crater which was "visible from the "landing-place or even some distance out at sea" to Mr. Mallet (*l. c.*, p. 23) in February 1884 and was "barely visible at 3 miles distance" to Capt. A. Carpenter in 1886 (*Records, Geol. Surv., India*, xx, 48) was no longer visible from these points in April 1891; on ascending the cone, however, steam was found to issue still at the places indicated in Mr. Mallet's memoir. The most copious discharge was still from the *solfatara* on the inner aspect of the north side of the crater.

A deposit of sulphur of an average thickness of  $2\frac{1}{2}$  inches had been laid down on this *solfatara* since 1884. On the other *solfataras* far less had been deposited; the crusts on the two next largest—that on the inner aspect of the south side of the crater and that outside the crater on the north-east face of the cone—were but  $\frac{3}{4}$  in. to 1 inch thick. The new crusts were very similar to the old ones described by Mr. Mallet (*l. c.*, p. 18) except as regards thickness; when pieces were removed, however, they were found to be looser in texture and more friable than the fragments of the old deposit that lay scattered about the crater and in estimating the present value of the *solfataras* as a sulphur-supply this should perhaps be taken into account. The temperature of the steam at the point of issue was not determined in 1891, but it can hardly be as hot now as in 1884—it was then  $219^{\circ}$  F.—since there was no crevice in which it was impossible to place one's hand for at least a few seconds.

In taking the temperature of the hot spring Mr. McCausland, Commander of H. M. I. M. *Nancowry* very kindly assisted me. At high tide there was no trace of percolation of water through the shingle of the small landing-place beach, but when the tide had ebbed water was found to ooze through this shingle at five different points round the head of the bay. Having scooped out pools sufficiently deep for complete immersion of a thermometer at these spots we took temperatures in as nearly as possible the fashion described by Mr. Mallet (*l. c.*, p. 26). In the most northerly small pool (furthest from the recent lava), the thermometer registered  $102^{\circ}$  F.; in the next pool towards the lava,  $103^{\circ}$  F.; then  $104^{\circ}$  F.; then  $106^{\circ}$  F.; finally in the pool nearest of all to the recent lava  $104^{\circ}$  F.; Mr. Mallet found that in 1884 the temperature of the different springs increased with their proximity to the recent lava; the discrepancy of our results as regards the last pool and that next adjacent to it (which, though five yards further from the lava was nevertheless  $2^{\circ}$  F. warmer) from the experience of Mr. Mallet led us to repeat the whole observation and to take the temperatures in these two last pools several times; our results were, however, the same

on each occasion. There appears to have been more water in the spring at the time of Mr. Mallet's visit (Feb.) than when our observations were made (April) for he found it possible to take temperatures in seven places while we could only do so in five.

This spring was formerly much hotter than it is now, but unfortunately the early observations are not at all definite: 'as hot almost 'as if it had been boiling' (commander of a vessel, 1832); 'temperature too high to be borne with the hand' (Playfair, 1837); 'natural boiling spring' (Mouat, 1857); 'nearly at the boiling point' (Liebig 1858); 'scalding hot' (Parish, 1862). The observations made since 1862 being more precise are here appended:—

| Date.          | Temperature of Spring.         | Authority.                                                                |
|----------------|--------------------------------|---------------------------------------------------------------------------|
| April, 1866    | 158° F. and 163° F.            | Andaman Committee,<br><i>Report in Proc. As. Soc. Beng.</i> 1866, p. 213. |
| March, 1873    | 130° F. (highest observed)     | Ball, <i>Rec. Geol. Surv. India</i> , vi, p. 87.                          |
| February, 1884 | 106°—116° F.                   | Mallet, <i>Mem. Geol. Surv. India</i> , xxi, pt. 4, p. 26.                |
| April, 1886    | 110° F. (solitary observation) | Daley, <i>Rec. Geol. Surv. India</i> , xx, 48.                            |
| April, 1891    | 102°—106° F.                   | Prain.                                                                    |

The observations given in this table are not of quite equal value because they have not been taken on a uniform principle. The Andaman Committee above referred to (Dr. Gamseks, Lt. Laughton and Mr. Homfray) describe the spring accurately as issuing from underneath the lava across the small bay, but though Mr. Ball (*l. c.*) speaks of them as recording the temperature "at from 158° to 163°" the statement in their report is that at low tide in one place the temperature was found to be 163° F., and at another 158° F. We cannot therefore be certain that these figures give either the maximum or the minimum temperature in 1866, though it is highly probable even if one of them represents a limit that they do not exhibit the full range of temperature at that time. Mr. Ball's observation. is rather more precise; the highest temperature is given as 130° F. taken close to high-water mark where the spring bubbles up; unfortunately he does not give the range of temperature in 1873. In connection with this it should be noted that Mr. A. O. Hume, speaking of this very observation, says

(*Stray Feathers* ii, 104) "the thermometer showed a temperature of "nearly 140° F." This remark occurs in the narrative portion of a paper on the ornithology of the islands of the Bay of Bengal and is clearly written from memory only; attention is drawn to it now merely in order to prevent any one who may subsequently read the statement from relying upon it as exact. Mr. Mallet's observations are very comprehensive and precise. Only the bare result of Mr. Daley's observation is given and only one temperature is mentioned: it is not stated that it was the highest, and it is possible that the temperature was taken at one spot only.

The rate of cooling of the spring as indicated by the various highest readings of the preceding table is shown in the table subjoined:—

| Period. | No. of years. | Amt. of cooling.   | Rate <i>per annum</i> . |
|---------|---------------|--------------------|-------------------------|
| 1866-73 | 7             | 33° F. or 18·30°C. | 4·7° F. or 2·6°C.       |
| 1873-84 | 11            | 14° F. or 7·70C.   | 1·2° F. or 0·6°C.       |
| 1884-86 | 2             | 6° F. or 3·3°C.    | 3·0° F. or 1·7°C.       |
| 1886-91 | 5             | 4° F. or 2·2°C.    | 0·8° F. or 0·4°C.       |

The rates *per annum* shew that the existence of an error in the 1886 observation is not only possible but highly probable; the spot selected for examination can hardly have been that in which the temperature was highest at the time. If it be neglected the rate *per annum* for the whole 1884-91 period is  $\frac{10}{7}$  or 1·4° F. (=0·7°C.) a rate that, allowing for errors unavoidable in such observations, is practically uniform with that during the 1873-84 period. Between 1866 and 1873 it cooled nearly four times as fast as it has cooled since; if the 1886 observation is correct, six times as fast as it is cooling now. If the rate continues uniform henceforth the spring will, if the 1886 observation be correct, probably cease to deserve the appellation "hot" by 1925, if the 1886 observation was *not* taken where the water was hottest at the time, the spring will probably be cool by 1910.



## LIBRARY.

The following additions have been made to the Library since the meeting held in April last.

## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

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- . ————. Tijdschrift voor Indische Taal-, Land-en Volkenkunde, Deel XXXIV, Aflevering, 3 en 4.
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- Bombay. Bombay Natural History Society,—Journal, Vol. V, No. 4.
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- . Indian Engineering,—Vol. IX, Nos. 14-18.
- . Photographic Society of India,—Journal, Vol. IV, No. 4.
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- Dresden. Gesellschaft Iris zu Dresden,—Deutsche Entomologische Zeitschrift, Jahr 1890, Zweites Lepidopterologisches Heft, Band III, Heft 2.
- Edinburgh. The Scottish Geographical Society,—Magazine, Vol. VII, No. 1, and Index to Vol. VI.
- Florence. La Società Italiana di Antropologia, Etnologia e Psicologia Comparata,—Archivio per L' Antropologia e la Etnologia, Vol. XX, Fascicolo 3°.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Janvier—Février, 1891.
- London. Institution of Mechanical Engineers,—Proceedings, No. 3, 1890.
- . Nature,—Vol. XLIII, Nos. 1116-20.
- . Royal Astronomical Society,—Monthly Notices, Vol. LI, Nos. 1 and 2.

- London. Royal Geographical Society,—Proceedings, Vol. XIII, Nos. 1 and 2.
- . Royal Microscopical Society,—Journal, Part 6, 1890.
- . Royal Society,—Proceedings, Vol. XLVIII, No. 295.
- . Royal Statistical Society,—Journal, Vol. LIII, Part 4.
- . The Academy,—Nos. 985-89.
- . The Athenæum,—Nos. 3308-12.
- Mendon, Illinois. The American Antiquarian and Oriental Journal,—Vol. XIII, No. 2.
- Mexico. Estados Unidos Mexicanos,—Informes y Documentos relativos à Comercio Interior y Exterior Agricultura é Industrias, Nos. 65 and 66.
- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin, No. 3, 1890.
- . Meteorologische Beobachtungen, Das Jahr 1890—Erste Hälfte.
- New York. The Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 3.
- Paris. Journal Asiatique,—Tome XVI, No. 3.
- . La Société de Géographie,—Compte Rendu des Séances, Nos. 6-8, 1891.
- . La Société Zoologique de France,—Bulletin, Tome XV, No. 10.
- . Mémoires, Tome III.
- Philadelphia. Museum of American Archæology,—Annual Report, Vol. I, No. 1.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 2.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, Disp. 2<sup>a</sup>.
- St. Petersburg. Comité Géologique,—Mémoires, Tome IV, No. 2; V, 1; VIII, 2.
- Stettin. Entomologischen Vereine zu Stettin,—Entomologische Zeitung, Jahr LI.
- Sydney. Linnean Society of New South Wales,—Proceedings, Vol. V, Part 4.
- Taiping. Government of Perak,—The Perak Government Gazette, Vol. IV, Nos. 6-8, and Index to Vol. III.
- Toronto. Canadian Institute,—Transactions, Vol. I, Part I.
- Turin. La R. Accademia delle Scienze di Torino,—Atti, Vol. XXV, Disp. 15<sup>a</sup>; XXVI, Disp. 4<sup>a</sup>-5<sup>a</sup>.
- . Memorie, Serie Seconda, Tomo XL.
- . La Osservatorio della Regia Università di Torino,—Osservazioni Meteorologiche, Anno 1890.

- Vienna. Der Anthropologischen Gesellschaft in Wien,—Mittheilungen, Band XX, Heft 3 u 4.  
 ———. Der K. K. Géologischen Reichsanstalt,—Verhandlungen, Nrn. 2-4, 1891.  
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## BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

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 RAY, PRATAPA CHANDRA, C. I. E. The Mahabharata, translated into English Prose, Part LXV, Canti Parva. 8vo. Calcutta, 1891.  
 SARMA, PANDIT BHIMA SEN. Manavadharma Sāstra, Vol. VII, Part 2. 8vo. Allahabad, 1891.  
 SEN, KAVIRAJ VIYAYARATNA. Ashtanga Hridaya, No. 2. 8vo. Calcutta, 1890.

## MISCELLANEOUS PRESENTATIONS.

- Annual Report of the Agri-Horticultural Society of Burma for the year 1890 (Read at the General meeting held at the Phayre Museum). 8vo. Rangoon, 1890.  
 Minutes of an Ordinary General Meeting of the Agri-Horticultural Society of Burma, held at the Phayre Museum, on Monday, the 30th March, 1891. 8vo.

AGRI-HORTICULTURAL SOCIETY OF BURMA.

- Catalogue of Ferns in the Herbarium of the Government of India at Saharanpur. Calcutta, 1890.

BOTANICAL GARDEN, SAHARANPUR.

- Resolution on the Revenue Administration of the Central Provinces for the year 1889-90, ending 30th September, 1890. Fcp. Nagpur, 1891.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

- Botany: Contributions to the Queensland Flora. By F. M. Bailey, F. L. S. (Bulletin, Department of Agriculture, Brisbane, No. 7). 8vo. Brisbane, 1891.

DEPARTMENT OF AGRICULTURE, BRISBANE.

- Returns of the Rail and River-Borne Trade of Bengal during the quarter ending the 31st December, 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF BENGAL.

An Account of the Caves at Nadsur and Karsambla. By Henry Consens (Archæological Survey of Western India, No. 12). 4to. Bombay, 1891.

GOVERNMENT OF BOMBAY.

The Indian Antiquary, Vol. XX, Parts 245 and 246. 4to. Bombay, 1891.

The Voyage of François Pyrard of Laval to the East Indies, the Maldives, the Moluccas and Brazil. By Albert Gray and H. C. P. Bell, Vol. II, Part 2. 8vo. London, 1890.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Report on the Administration of the Madras Presidency, during the year 1889-90. Fcp. Madras, 1890.

GOVERNMENT OF MADRAS.

Report on the Meteorology of India in 1889. By John Eliot, M. A. Fcp. Calcutta, 1891.

METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

Tablas Psycrométricas calculadas Para la Altura De México tablas abreviadas generales compiladas por José Zendejas. 8vo. Mexico, 1889.

OBSERVATORIO METEOROLÓGICO-MAGNÉTICO CENTRAL DE MÉXICO.

Twenty-sixth Annual Report of the Sanitary Commissioner with the Government of India, 1889. Fcp. Calcutta, 1891.

SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

Katalog der Vogelsammlung in Museum der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am main Von Ernst Hartert. 8vo. Frankfurt, 1891.

SENCKENBERGISCHE NATURELSCHEN GESELLSCHAFT, FRANKFURT.

### PERIODICALS PURCHASED.

Allahabad. North Indian Notes and Queries,—Vol. I, No 1.

Berlin. Deutsche Litteraturzeitung,—Jahrgang XI, Nrn. 49-52; XII, 1-5.

———. Journal für die reine und angewandte Mathematik,—Band CVII, Heft 3 u 4.

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- Göttingen. Der Königl. Gesellschaft der Wissenschaften,—Göttin-  
gische Gelehrte Anzeigen, Nrn. 23-26, 1890; 1, 1891.
- . ———. Nachrichten, Nrn. 13-14, 1890.
- Leeds. The Journal of Conchology,—Vol. VI, No. 8.
- Leipzig. Annalen der Physik und Chemie,—Band XLII, Heft 4.
- . ———. Beiblätter, Band XV, Stück 2 u 3.
- . Literarisches Centralblatt,—Nrn. 50-52, 1890, und Index, 1890.
- Leyden. Internationales Archiv-für Ethnographie,—Band III, Heft 6.
- London. The Annals and Magazine of Natural History,—Vol. VI  
(sixth series), Nos. 37 and 38.
- . The Chemical News,—Vol. LXIII, Nos. 1634-38.
- . The Entomologist,—Vol. XXIV, Nos. 332 and 333.
- . The Entomologist's Monthly Magazine,—Vol. II (2nd series),  
Nos. 320 and 321.
- . The Ibis,—Vol. III (sixth series), No. 9.
- . The Journal of Botany,—Vol. XXIX, Nos. 337-38.
- . The London, Edinburgh and Dublin Philosophical Magazine,  
—Vol. XXXI (5<sup>th</sup> series), Nos. 188 and 189.
- . The Messenger of Mathematics,—Vol. XX, Nos. 6 and 7.
- . The Quarterly Journal of Microscopical Science,—Vol.  
XXXII, Part I.
- . Rhopalocera Exotica,—Part 15.
- New Haven. The American Journal of Science,—Vol. XL (3<sup>rd</sup> Series),  
No. 240; XLI, Nos. 241-42.
- Paris. L' Academie des Sciences,—Comptes Rendus des Séances,—  
Tome CXI, Nos. 22-26; CXII, 1-4, et Tables, Tome CX.
- . Annales de Chimie et de Physique,—Tome XXII (6<sup>me</sup> Série),  
Janvier et Février, 1891.
- . Journal des Savants, Décembre, 1890.
- . Revue Scientifique,—Tome XLVII, Nos. 12-16.
- . Revue Critique d' Histoire et de Litterature,—Tome XXX, Nos.  
49-52; XXXI, 1-4.
- Philadelphia. Manual of Conchology,—Vol. XII, Part 3; Vol. VI (2<sup>nd</sup>  
series), Part 3.

### BOOKS PURCHASED.

- Chakradasta. 4to. Calcutta.
- GRAHAM, WILLIAM. Socialism, new and old, (The International Scien-  
tific series, Vol. LXX). 8vo. London, 1890.
- NAVILLE, EDOUARD. Bubastis, (1887-89). Eighth Memoir of the  
Egypt Exploration Fund, volume for 1889-90. 4to. London, 1891.
- The Zoological Record, Vol. XXVI, 1889. 8vo. London, 1890.

# PROCEEDINGS

OF THE

## ASIATIC SOCIETY OF BENGAL,

FOR JUNE, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd June, 1891, at 9-15 P. M.

L. DE NICEVILLE, Esq., F. E. S., in the Chair.

The following members were present :—

E. C. Cotes, Esq., T. R. Munro, Esq., J. D. Nimmo, Esq., R. D. Oldham, Esq., W. L. Selater, Esq., Dr. J. H. Tull Walsh.

Visitor :—Thomas H. Holland, Esq.

The minutes of the last meeting were read and confirmed.

Thirty-three presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society were ballotted for and elected Ordinary Members.

Rev. D. G. Lathom-Browne.

F. A. Shillingford, Esq.

The following gentleman is a candidate for election at the next meeting :—

Thomas H. Holland, Esq., Geological Survey of India, proposed by R. D. Oldham, Esq., seconded by W. L. Selater, Esq.

The SECRETARY reported the death of the following members :—

John Boxwell, Esq., C. S.

C. W. Baumgarten, Esq.

The PRESIDENT announced that Dr. J. H. Tull Walsh had been elected a member of Council in the room of Dr. D. D. Cunningham, resigned, in consequence of proceeding to Europe on furlough.

Mr. W. L. SCLATER exhibited an old breech-loading gun, which was dug up in the Gya district and was presented to the Indian Museum by Mr. F. Field; the gun had been examined by Col. Mortimer, R. A., of the Ordnance Department, Fort William, who pronounces it to be of European manufacture probably dating from the 16th century, and that it was known by the name of Perrier or Paterera.

Mr. E. C. COTES exhibited two insects which are amongst the causes now conspiring to prevent the continuance of the locust plague through another year.

The following papers were read :—

1. *Note on a fiery hot-blast in the district of Khuln'a, on the 12th May, 1891.*—By H. JAMES RAINEY. Communicated by the NATURAL HISTORY SECRETARY.

While my brother, Mr. J. Rudd-Rainey, and I were at dinner on the 12th May last, in the centre room of "Rainey Villa," between the hours of 8 and 9 o'clock, a very *cool* wind which was blowing into the room through the south door from the south-east direction quite suddenly changed to an absolutely *warm* blast from the same quarter, and was accompanied by a clearly discernible smell of combustion. So great was the heat, and so strong the smell of burning even within the room, that I immediately left it and went to the south verandah to see if there was any thatched house on fire close to the brick-built building I was in. I found no sign of any conflagration anywhere in the horizon, but the warm blast outside became absolutely fiery in its intensity. I could barely face it, and that only for a minute or so at a time. I may describe the sensation I felt to be similar to that of standing in close proximity to a heated furnace, or near to and windward of a burning expanse of jungle. This fiery hot-blast continued to blow for about the space of a quarter of an hour, and then the wind suddenly veered to the opposite direction, that is, from south-east to south-west, and a *cool* breeze set in, which was very grateful, indeed. The sky was overcast with clouds, but of no great density, and some stars were visible here and there, though none of the seven bright stars constituting the constellation *Ursa Major*, or even the pole star. There was much display of electricity in the shape of vivid flashes of lightning in different directions, but especially from the south-east quarter.

I regret exceedingly that I omitted to consult the thermometer at the time, to note the degree of the temperature when exposed to the intensely hot blast. From the result of enquiries instituted by me among my tenants and others, the fiery hot blast appears to have extended to a radius of several miles of my residence, which, I may state, is situated in Khulná Proper, on the left bank or east side of the wide river Rupsháhá, on the opposite or west side of which river stands the present Civil Station of Khulná, and within half a mile distance from it.

I have never before this occurrence experienced anywhere in India, or elsewhere, such a strange intensely hot blast, and cannot in any way satisfactorily account for it. As the subject may be of some interest to Meteorologists, perhaps it would be worth while to fully discuss and elucidate it. I may add that, I find from the *Centenary Review* of the Society, that in Jour. As. Soc., B., Vol. XVII, 1848, there appears a paper on this subject from the veteran Meteorologist H. Piddington, entitled "A Notice of a remarkable Hot Wind in the Zillah of Purneah," but owing to the destruction of my Library I am unable to refer to it.

2. The 'Tsam-*chhó-dung*' (*rtsa-mchhog-grong*) of the Lamas, and their very erroneous identification of the site of Buddha's death.—By L. A. WADDELL, M. B.

The paper will be published in the Journal, Part I.

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## LIBRARY.

The following additions have been made to the Library since the meeting held in May last.

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## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Bombay. The Indian Antiquary,—Vol. XX, Part 247.

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Notes on Indian Rotifers. By H. H. Anderson, B. A. (A Reprint from the Journal of the Asiatic Society of Bengal). 8vo. Calcutta, 1891.

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Report of the President of Yale University for the year ending December 31st, 1890. 8vo. New Haven, 1891.

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Allahabad. North Indian Notes and Queries,—Vol. I, No. 2.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften,—Heft II, 1888.

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London. *The Chemical News*,—Vol. LXIII, Nos. 1639-42.  
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR JULY, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st July, 1891, at 9-15 p. m.

J. WOOD-MASON, Esq., Vice-President, in the chair.

The following members were present :—

Dr. A. W. Alcock, Bábú Sarat Chandra Dás, Rev. H. B. Hyde, C. Little, Esq., Bábú Asutosh Mukhopádhyáy, L. de Nicéville, Esq., J. D. Nimmo, Esq., C. R. Wilson, Esq.

The minutes of the last meeting were read and confirmed.

Fifty-one presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was ballotted for and elected an Ordinary Member :—

Thomas H. Holland, Esq.

The SECRETARY reported the death of the following member :—

Lieut.-Col. Sir O. B. St. John, R. E., K. C. S. I.

The PRESIDENT stated that the votes of the members would now be taken on the proposed transfer of Rs. 50,000 of the Society's Permanent Reserve Fund to Municipal Debentures, reported at the meeting in May last, and appointed Dr. A. W. Alcock and Bábú Asutosh Mukhopádhyáy to be Scrutineers, who reported that there were 80 votes in favour of and 14 votes against the proposed transfer, whereupon the President announced that it had been duly carried.

BÁBÚ SARAT CHANDRA DÁS read a short note on the first tests of renunciation of the early Buddhists.

The following papers were read :—

1. *Additional Uredineae from the Neighbourhood of Simla.*—By A. BARCLAY, M. B., *Bengal Medical Service.*

The paper will be published in the Journal, Part II.

2. *Troy weights and general currency of ancient Orissa.*—By MAN MOHAN CHAKRAVARTI, M. A., B. L.

The paper will be published in the Journal, Part I.

### LIBRARY.

The following additions have been made to the Library since the meeting held in June last.

### TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Angers. La Société d'Etudes Scientifiques d'Angers,—Bulletin, XIX<sup>e</sup> Année.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. XII, Nos. 6-8; XIII, 1.

—————. —————. American Journal of Mathematics, Vol. XIII, Nos. 1 and 2.

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Berlin. Der Königlich Preussischen Akademie der Wissenschaften zu Berlin,—Sitzungsberichte, XLI-LIII; Inhalt Jahrgang 1890.

Bombay. Bombay Natural History Society,—Journal, Vol. VI, No. 1.

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- . a. O. Des Naturwissenschaftl Vereins des Reg-Bez Frankfurt,—Monatliche Mittheilungen aus dem Gesamtgebiete der Naturwissenschaften, Jahrgang VIII, Nrn. 4-11.
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- . Nature,—Vol. XLIV, Nos. 1125-28, and Index to Vol. XLIII.
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- . Royal Geographical Society,—Proceedings, Vol. XIII, Nos. 3 and 4.
- . Royal Institution of Great Britain,—Proceedings, Vol. XIII. Part 1.
- . Royal Microscopical Society,—Journal, Parts 1 and 2, 1891.
- . Royal Society,—Proceedings, Vol. XLIX, Nos. 296 and 298.
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- . The Academy,—Nos. 994-97.
- . The Athenæum,—Nos. 3317-20.
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- Moscow. La Société Impériale des Naturalistes de Moscou,—Bulletin, No. 4, 1890.
- . ———. Meteorologische Beobachtungen, Das Jahr, 1890,—Zweite Hälfte.
- New Haven. Connecticut Academy of Arts and Sciences,—Transactions, Vol. VIII, Part 1.
- New York. American Museum of Natural History,—Bulletin, Vol. III, No. 1.
- . Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 5.
- Paris. Journal Asiatique,—Tome XVI, No. 2; XVII, 1.
- . L'Académie Nationale des Sciences, Belles-Lettres et arts de Bordeaux,—Actes, 3<sup>e</sup> série—XLIX et L<sup>e</sup> Années.



- Paris. La Société Académique Indo-Chinoise de France,—Bulletin, 2<sup>e</sup> Série. Tome III.
- . La Société D'Anthropologie de Paris,—Bulletins, Tome I (IV<sup>e</sup> Série) Fasc. 2<sup>e</sup> et 3<sup>e</sup>.
- . ———. Mémoires, Tome IV (2<sup>e</sup> Série), Fasc. 2<sup>e</sup>.
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- . ———. Compte Rendu des Séances, No. 11, 1891.
- . La Société Zoologique de France,—Bulletin, Tome XVI, Nos. 1 et 2.
- . Musée Guimet,—Revue de l'Histoire des Religions, Tome XXII, Nos. 1-3.
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- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, Disp. 4<sup>a</sup>.
- St. Petersburg. Comité Géologique,—Bulletins, Tome IX, Nos. 7 et 8.
- . ———. Mémoires, Vol. V, No. 5; X, 1.
- . La Société Impériale Russe de Géographie,—Proceedings, Tome XXVII, No. 3.
- Taiping. Perak Government,—Perak Government Gazette, Vol. IV, Nos. 13-16.
- Tokyō. Imperial University of Japan,—Journal of the College of Science, Vol. IV, Part 1.
- Vienna. Der Anthropologischen Gesellschaft in Wien,—Mittheilungen, Band XXI, Heft 1, und General-Register, Band XI-XX.
- . Der K. K. Géologischen Reichsanstalt,—Abhandlungen, Band XIV.
- . Der Kaiserlichen Akademie der Wissenschaften,—Archiv für Österreichische Geschichte, Band LXXV, Hälfte 1 und 2.
- . ———. Denkschriften (Mathematisch-Naturwissenschaftliche classe), Band LVI.
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- CONSTABLE, A. The Kennet Ciburium (Reprinted with additions from Scottish National Memorials). Fol. Edinburgh, 1890.
- ELLIS, J. B., and EVERHART, BENJAMIN M. New North American Fungi (Reprinted from the Proceedings of the Academy of Natural Sciences of Philadelphia, July 29th, 1890). 8vo.
- . New Species of Fungi from various localities (Reprinted from the Proceedings of the Academy of Natural Sciences of Philadelphia, Part I, 1891). 8vo.
- . New Species of Montana Fungi (Reprinted from the Botanical Gazette, February, 1891). 8vo.
- . Notes on a Species of *Coprinus* from Montana (Reprinted from the Microscope, Vol. X, No. 5). 8vo. Trenton, 1890.
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of the Last Season's Deep-Sea Dredging (Reprinted from the Annals and Magazine of Natural History for January, February, and March 1891). 8vo. London, 1891.

### MISCELLANEOUS PRESENTATIONS.

Proceedings of the General Meeting of the Asiatic Society of Ceylon and Ceylon Branch of the Royal Asiatic Society, held on 20th December, 1890. 8vo.

ASIATIC SOCIETY OF CEYLON.

Report of the sixtieth meeting of the British Association for the Advancement of Science held at Leeds in September, 1890. 8vo. London, 1891.

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Profitable Uses of the Mango Crop. By E. M. Shelton. 8vo. Brisbane, 1891.

Recent Experiments made at the American Agricultural Experiment Stations. Edited by E. M. Shelton (Bulletin, Department of Agriculture, Brisbane, No. 8, 1891). 8vo. Brisbane, 1891.

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Contributions to Canadian Palæontology, Vol. III. On Vertebrata from the Tertiary and Cretaceous Rocks of the North West Territory. By E. D. Cope. 4to. Montreal, 1891.

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Administration Report of the Meteorological Reporter to the Government of Bengal for the year 1890-91. Fcp. Calcutta, 1891.

Administration Report on the Jails of Bengal for the year 1890. By Surgeon-Major A. S. Lethbridge, M. D., C. S. I. Inspector-General of Jails, Bengal. Fcp. Calcutta, 1891.

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Army Estimates of Effective and Non-effective Services, for 1891-92. Fcp. London, 1891.

The Conquest of the River Plate (1535-1555). 8vo. London, 1891.

An Estimate of the Sum required in the year ending 31st March, 1892, to defray the Expense of the Ordnance Factories, the Cost of the Productions of which will be charged to the Army, Navy, and Indian and Colonial Governments, &c. Fcp. London, 1891.

Memorandum of the Secretary of State relating to the Army Estimates for 1891-92. Fcp. London, 1891.

Return of all Loans raised in India, chargeable on the Revenues of India, outstanding at the commencement of the half-year ended on the 30th September, 1890. Fcp. London, 1891.

Return of all Loans raised in England under the Provisions of any Acts of Parliament, chargeable on the Revenues of India, outstanding at the commencement of the half-year ended on the 30th September, 1890. Fcp. London, 1891.

Statement showing, approximately, the sums provided in the Army Estimates for 1891-92 for each Arm of the Service, and for various Miscellaneous Establishments, and the Estimated Cost of the Personnel of the Army. Fcp. London, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Epigraphia Indica and Records of the Archæological Survey of India, Part VII, June, 1891. Fcp. Calcutta, 1891.

GOVERNMENT OF INDIA, REV. AND AGRI. DEPT.

Results of Observations of the Fixed Stars made with the Meridian Circle at the Government Observatory, Madras, in the year 1868, 1869 and 1870. 4to. Madras, 1890.

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Johns Hopkins University Studies in Historical and Political Science. Eighth Series, V—VI. The Study of History in Germany and France. By Paul Frédéricq. 8vo. Baltimore, 1890.

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———. XI—XII. Seminary Notes on Recent Historical Literature. By Dr. H. B. Adams, &c. 8vo. Baltimore, 1890.

On Relations between the Lines of various Spectra, with Special Reference to those of Cadmium and Zinc, and a Redetermination of their Wave-lengths. By Joseph Sweetman Ames (Reprinted from the Philosophical Magazine for July, 1890). 8vo. London, 1890.

On some Gaseous Spectra:—Hydrogen, Nitrogen. By Joseph Sweetman Ames (Reprinted from the Philosophical Magazine for July, 1890). 8vo. London, 1891.

On the Morphology of the Compound Eyes of Arthropods. By S. Watase (Reprinted from the Studies from the Biological Laboratory, Johns Hopkins University, Vol. IV, No. 6). 8vo. Baltimore.



- The Relationships of Arthropods. By H. T. Fernald, M. S. (Reprinted from the Studies from the Biological Laboratory, Johns Hopkins University, Vol. IV, No. 7). 8vo. Baltimore, 1890.
- Dissertations presented to the Board of University Studies of the Johns Hopkins University for the degree of Doctor of Philosophy :—
- A Study of Juvenius. By James Taft Hatfield. 8vo. Bonn, 1890.
- Attention. A Historical Summary of the Discussions concerning the subject. By Lemon L. Uhl, Ph. D. 8vo. Baltimore, 1890.
- Dioxybenzoyl-Benzene-Sulphonic Acid and Sulphon-Fluoresceïn. By Charles C. Blackshear. 8vo. Baltimore, 1890.
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- Report of the Board of Governors of the Public Library, Museum, and Art Gallery of South Australia, with the Reports of the Standing Committees, for 1889-90. Fcp. Adelaide, 1890.

## PUBLIC LIBRARY, MUSEUM, AND ART GALLERY OF SOUTH AUSTRALIA, ADELAIDE.

- Briefe, Abhandlungen und Predigten aus den Zwei letzten Jahrhunderten des Kirchlichen alterthums und dem anfang des mittelalters. Von Dr. C. P. Caspari. 8vo. Christiania, 1890.
- Etruskisch und Armenisch. Sprachvergleichende Forschungen von Dr. Sophus Bugge. Erste Reihe. 8vo. Christiania, 1890.
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- . Zeitschrift für Ethnologie,—Heft VI, 1890; 1, 1891.

- Calcutta. Indian Medical Gazette,—Vol. XXVI, No. 6.
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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR AUGUST, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th August, 1891, at 9-15 P. M.

THE HON'BLE SIR A. W. CROFT, K. C. I. E., President, in the chair.

The following members were present :—

Dr. A. F. R. Hoernle, Rev. H. B. Hyde, W. H. Jobbins, Esq., Dr. W. King, C. Little, Esq., Bábu Asutosh Mukhopádhyaý, L. de Nicéville, Esq., W. L. Selater, Esq., Pandit Hara Prasád Shástri, C. H. Tawney, Esq., Dr. J. H. Tull Walsh, C. R. Wilson, Esq.

Visitor :—Dr. E. Thurston.

The minutes of the last meeting were read and confirmed.

Forty-two presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting :—

H. C. Mallik, Esq., Calcutta, proposed by Hon. Sir A. W. Croft, seconded by C. Little, Esq.

Dr. E. H. Brown, Civil Surgeon, Puri, proposed by Bábu Man Mohan Chakravarti, seconded by C. Little, Esq.

Dr. M. A. Stein, Principal, Government College, Lahore, proposed by Dr. A. F. R. Hoernle, seconded by C. Little, Esq.

Diego Ernst, Esq., Delhi, proposed by W. L. Selater, Esq., seconded by Dr. W. King.

Dr. Edgar Thurston, Superintendent, Government Central Museum, Madras, proposed by Dr. W. King, seconded by W. L. Selater, Esq.



The SECRETARY reported the death of the following member :—  
Rájá Rájendralála Mitra, LL. D., C. I. E.

The PRESIDENT observed :—It is with great regret that I have to make to the Society the formal announcement of the death of one of its most distinguished members, Rájá Rájendralála Mitra. It is not only within the walls of this Society, or even in Bengal, that his loss will be deplored ; it will be felt throughout Europe ; for wherever learning is cultivated, there the name of Rájendralála Mitra is held in honour. His connection with this Society, extending over nearly half a century, was of a quite exceptional character. Entering it, when a young man, as Assistant-Secretary and Librarian, his commanding abilities and untiring industry soon brought him into prominence ; and while we may congratulate ourselves that it was this Society which first gave him the opportunity of satisfying his inexhaustible craving for knowledge, we must gratefully admit that he has amply repaid the debt by the contributions that he has made to Oriental learning, and by the lustre that his name and attainments have shed upon the Society, of which he was one of the most distinguished in the long roll of Presidents.

I will only add that the Council at its last meeting passed the following Resolution :—

“The Council desire to place on record their deep sense of the very great loss the Asiatic Society of Bengal and Oriental Learning have sustained by the death of their former President and Vice-President, Rájá Rájendralála Mitra, and to express their great sorrow at the sad event that has deprived the Society of a most learned and distinguished supporter who has been closely connected with it for nearly half a century, and the Council of a much esteemed Colleague.”

The PRESIDENT read the following letter :—

No. 357.

To

THE SECRETARY, ASIATIC SOCIETY, BENGAL.

Home Department. }  
Book.

*Simla, the 26th June, 1891.*

Sir,

I am directed to state for the information of the Bengal Asiatic Society that Lieutenant-Colonel H. H. Godwin-Austen's work on the land and fresh water Mollusca of India and surrounding countries, a

copy of which has already been forwarded for the use of the Society, was intended to be supplementary to Messrs. Theobald and Hanley's "*Conchologia Indica*," but it is unfortunately unfinished, though complete in itself so far as it goes. In connection with the publication of the "*Fauna of British India*" it has been suggested to the Government of India that, on completion of the present series of seven volumes relating to the *Vertebrata*, the work should be extended so as to comprise the *Invertebrata* as well, and this proposal has been recommended for the favourable consideration of the Secretary of State. As, however, the following up of Colonel Godwin-Austen's work must be a necessary preliminary to any adequate treatment of the subject in the proposed extension of the *Fauna Indica* series, I am to enquire whether any person connected with the Asiatic Society would be willing to continue the researches so ably begun by Colonel Godwin-Austen.

I have &c.,

(Signed) P. G. MELITUS,

*Under-Secy. to the Govt. of India.*

The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins:—

I. Report on 232 Silver coins forwarded by the Deputy Commissioner of Jabalpur, with his No. 1941, dated 6th May, 1891.

The Deputy Commissioner's letter states that they were found buried, but no particulars as to where, when and how they were discovered are given.

All the coins are Moghuls, and belong to the following emperors of Delhi:—

|                                                           |           |
|-----------------------------------------------------------|-----------|
| 1, AKBAR, 963—1014 A. H. = 1556—1605 A. D.                |           |
| round <i>jal jalál</i> rupees of the Ahmadábád mint ..... | 2         |
| 2, JAHÁNGÍR, 1014—1037 A. H. = 1605—1627 A. D.            |           |
| round rupees of several varieties .....                   | 6         |
| 3, SHÁH JAHÁN, 1037—1068 A. H. = 1627—1658 A. D.          |           |
| a, type: square areas, 4 varieties .....                  | = 55      |
| b, type: round areas, 4 varieties .....                   | = 8       |
| c, type: lettered surfaces, 4 varieties .....             | = 12   75 |
| 4, AURANGZÍB, 1068—1118 A. H. = 1658—1707 A. D.           |           |
| a, type: <i>badr munír</i> , 3 varieties .....            | = 126     |
| b, type: <i>míhr munír</i> , .....                        | 17        |
| c, type: <i>Abul Muza'ffar</i> .....                      | 4         |
| d, type: reversed writing .....                           | 2   149   |
| Total ...                                                 | 232       |

The earliest of these coins is dated in the 40th year of Akbar, that is 1596 A. D., the latest is dated in the 30th year of Aurangzib, that is, 1687 A. D. They cover a period of nearly one century, and they must have been buried not long after the year 1687 A. D., in the place where they were dug up.

Among them there are several of considerable interest, especially among the rupees of Aurangzib; thus those of the *badr munir* type. Rupees of this description are not common; they appear to have been only minted in Akbarnagar, Zafarábád and Multán. I am not certain as to the identity of the two first-named places; but Akbarnagar is said to be an old name of Rájmahal. In the present collection there are 17 rupees of this description; 15 of these are of the Akbarnagar mint, of the following years 1071, 1072, 1079, 1082, 1084, 1090, 1093, 1095; both years, that of the Hijrah as well as that of the reign, are shown on the reverse; while the usual practice is, to give the Hijrah on the obverse, but the reign on the reverse. One rupee is of the Zafarábád and one of the Multán mint; both of the same year, viz., Hijrah 1080 on the obverse, and regnal 12 on the reverse. Another peculiar rupee of Aurangzib is that which gives the obverse legend: *Muhammad Aurangzib Bahádur 'Alamgír Bádsháh Ghází* or *Muhammad Muhiu-d-dín Abu-l-Muzaffar Bahádur 'Alamgír Bádsháh Ghází*. Of this description there are four coins. Their mint is illegible; their dates are 1069 *aḥad*, 1080-3, 1081-3, 1082-4; the years are disposed, as usual, on the obverse and reverse. Another curiosity are two rupees of Aurangzib which bear the usual legends but in inversed characters, so that they may be read if held against a mirror. The characters are rather crude; the mint is not legible, the year of the reign is either 22 or 27, that of the Hijrah is 109\*. Coins of this description, might of course, be struck from ordinary rupees.

II. Report on 116 old coins forwarded by the Deputy Commissioner of Sagar, with his No. 1708, dated the 14th May, 1891.

These coins are stated to have been found in the village waste of Raigawan, in the Rhurai Tahsil of the Sagar District, by boys who were tending cattle.

They are all silver coins and consist of 63 Pathán, 50 Gujarátí and 3 other coins: distributed as follows:

I, Pathan Coins (Rupees):

of SHER SHÁH, 947—952 A. H. = 1540—1545 A. D.

a, type: square areas, single-lined, as in *Chronicles*, No.

351, two varieties ..... 22

b, type: square areas, single-lined as in *Chronicles*, Nos.

344, 352, three varieties ..... 24

|                                                                                                                          |   |
|--------------------------------------------------------------------------------------------------------------------------|---|
| <i>c</i> , type : square areas, single-lined, new variety .....                                                          | 2 |
| <i>d</i> , type : square areas, double-lined, as in <i>Chronicles</i> ,<br>346, 354, two varieties.....                  | 6 |
| <i>e</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 9 .....  | 5 |
| <i>f</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 8.....   | 2 |
| <i>g</i> , type : round areas, single-lined, as in <i>Indian Anti-</i><br><i>quary</i> , vol. XVII, pl. I, fig. 10 ..... | 2 |

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Total coins of Sher Sháh ... 63

## II, Gujaráti Coins :

|                                                                                                                                                                                           |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1, MAHMÚD SHÁH I, 863—917 A. H. = 1458—1511 A. D.                                                                                                                                         |   |
| <i>a</i> , type : indented square area on obv., like <i>J. A. S. B.</i> ,<br>vol. LVIII, pl. I, fig. VIII. Mint Shádiyábád, date<br>913 ; weight $\frac{1}{2}$ tolá .....                 | 1 |
| <i>b</i> , type : square area on obv., unpublished, not in<br>British Museum Catalogue. Mint : Shahr .....,<br>date 903, weight $\frac{1}{2}$ tolá .....                                  | 1 |
| <i>c</i> , type : similar to above, but lighter, weight about $\frac{1}{3}$<br>tolá ; unpublished, not in British Museum Cata-<br>logue. Mint : <i>Shahr 'Aẓam Muṣṭafábád</i> ; date 906. | 1 |
| <i>d</i> , type : like <i>a</i> , but lighter ; weight like <i>c</i> ; not in<br>British Museum Catalogue. Mint illegible ; date<br>867.....                                              | 1 |
| <i>e</i> , type : like <i>a</i> , but lighter, weight like <i>d</i> , but smaller<br>and thicker size ; not published, nor in British<br>Museum Catalogue ; dates 902, 903 .....          | 2 |

---

Total coins of Maḥmúd ... 6

|                                                                                                                                                                                    |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 2, MUẒAFFAR SHÁH II, son of preceding, 917—932 A. H.<br>= 1511—1525 A. D.                                                                                                          |    |
| <i>a</i> , type : lettered surfaces, like British Museum Cata-<br>logue, No. 425, weight about $\frac{5}{8}$ tolá, date 930 on<br>reverse .....                                    | 1  |
| <i>b</i> , type : lettered surfaces ; similar to <i>a</i> , unpublished ;<br>not in British Museum Catalogue ; weight about<br>$\frac{5}{8}$ tolá ; 926 <sup>bis</sup> , 929 ..... | 3  |
| <i>c</i> , type : indented square area on reverse ; published<br>in British Museum Catalogue, No. 440 ; no mint<br>or date visible, weight about $\frac{1}{2}$ tolá each .....     | 12 |
| <i>d</i> , type : double indented square area on reverse ; un-                                                                                                                     |    |



|                                                                                                                                                                                                                                                                |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| published, not in British Museum Catalogue,<br>dates 920 <sup>bis</sup> , 921 <sup>bis</sup> , 922 <sup>s</sup> , 923 <sup>s</sup> , 924 <sup>l</sup> , 926 <sup>s</sup> , 928 <sup>l</sup> ,<br>932 <sup>l</sup> , about $\frac{1}{2}$ tolá each, total ..... | 17 |
| e, type: indented square area within circle on re-<br>verse; date 926, mint <i>Shahr</i> ....., unpublished,<br>not in British Museum Catalogue.....                                                                                                           | 1  |
| f, type: like d, but lighter, about $\frac{1}{4}$ tolá, dates 926,<br>930, 92* .....                                                                                                                                                                           | 4  |
| g, type: like c, but lighter about $\frac{1}{4}$ tolá; mint and<br>date not visible.....                                                                                                                                                                       | 6  |
| Total coins of Muzaffar ...                                                                                                                                                                                                                                    | 44 |
| Grand total of Gujarátí coins...                                                                                                                                                                                                                               | 50 |

|                                                                                                                                                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| III. Other coins; of uncertain attribution; very small;<br>less than $\frac{1}{4}$ tolá each; marked on one side with <i>جی</i><br><i>jí</i> and a triśula or trident, which used to be the em-<br>blem of the Ságár mint ..... | 3   |
| Grand total of all coins ...                                                                                                                                                                                                    | 116 |

This is a most interesting find. Most of the Gujarátí coins and some of Sher Sháh are new, hitherto not known or at least not published. Most of them, as shown by their catalogue, are not represented in the British Museum Collection.

III. Report on six old silver coins forwarded by the Deputy Commissioner of Jalandar, with his No. 752, dated 12th June, 1891.

The Deputy Commissioner's letter merely states that 39 coins were found buried in the Jalandar district, but no particulars are given as to the exact place and time of discovery.

Those 39 coins are stated to have comprised 4 of Aurangzíb, 2 of Farrukh Siyar and 33 of Muḥammad Sháh, all three Moghul emperors of Delhi, reigning between 1658 and 1748 A. D., a period of nearly one century. The coins accordingly were probably buried during the troubles of Nádir Sháh's invasion of India.

From among the 39 coins, 6 only were sent down to be examined and reported on, two of each kind. These were found to be of very common descriptions.

IV. Report on fifty old rupees forwarded by the Deputy Commissioner of Wardha, with his No. 3424, dated 3rd July 1891.

These old rupees are stated by the Deputy Commissioner to have been found buried in an earthen pot, when the foundations were being dug for additions to a small temple of Bálají at Waigaon, a village about ten miles south of Wardha. They are supposed to have been buried by the family of the Bhagat or attendant of that temple, because they were found on the site of a former dwelling-house of theirs, and the family have been Bhagats of the temple for three generations.

The find comprises rupees of the following emperors of Delhi :

|                                   |           |
|-----------------------------------|-----------|
| 1, SHÁH JEHÁN, A. D. 1627—1658    | 5 rupees. |
| 2, AURANGZÍB, A. D. 1658—1707     | 19 "      |
| 3, FARRUKH SIYAR, A. D. 1712—1719 | 3 "       |
| 4, MUḤAMMAD SHÁH, A. D. 1719—1748 | 21 "      |
| 5, 'ALAMGÍR ZÁNÍ, A. D. 1754—1769 | 2 "       |

Total ... 50 Rupees.

All these rupees are in a very bad condition and belong to very common descriptions. Possibly a few of the coins ascribed to Muḥammad Sháh may belong to his successor Aḥmad Sháh (A. D. 1748—1754).

The PHILOLOGICAL SECRETARY exhibited eight gold Gupta coins, belonging to Mr. Rivett-Carnac, and remarked as follows :

“Four of these coins belong to Chandra Gupta II, who reigned from about 395—415 A. D., and four to Kumára Gupta I, who reigned from 415—454 A. D. (see in J. A. S. B., Vol. LVIII, Pt. I, my synchronistic table). Of the coins of Chandra Gupta one is of the *Couch* type (see Smith’s Catalogue in the *Journal R. A. S.*, p. 76). This is an extremely rare type. Hitherto only one specimen was known. The present (second) specimen affords some new information. The king’s up-raised right hand is not empty, but holds a flower (lotus?), and he sits on a high-backed couch. The legend on the left margin (facing the king) is fully legible and reads देव श्री महारजाधिरज श्री च, and on the right margin (behind the king) it continues all round the rim, but unfortunately only नमः is just legible. Thus much was already known; it is *deva Śrī Mahārājādhirāja Śrī Chandra Gupta*. The vowel-marks of the long á were probably originally on the coin, and are merely worn away. The (hitherto illegible) characters below the couch are quite distinct and read clearly रूपज्ञतौ *rūpa-jñatī*, i. e., ‘he who is clever in dramatic composition.’ Above the *akshara* प *pa*, but quite detached from it, there is a small horizontal stroke. The meaning of it I do not know; but it is certainly not any vowel-mark; perhaps it owes its presence to a mere fault in the die. The word *rūpa* may mean either ‘sculp-

ture, figure' or 'dramatic composition;' and the compound *rūpa-kṛitī* may mean either 'who is clever in the making of figures' or 'who is clever in the making of dramas or dramatic representations.' I prefer taking the word in the latter sense, because it is not quite uncommon to hear of kings in ancient India being dramatic authors. The well-known drama, called the *Mricchhakatikā*, is ascribed by tradition to a king Śúdraka. Still more to the point is the discovery by Prof. F. Kielhorn, of a drama composed by the Chauhán king Vigharajadeva of Śákambharí (see *Indian Antiquary*, Vol. XX, p. 201), in the middle of the 12th century A. D. This drama was inscribed on a stone slab, which has been found in Ajmír; and Prof. Kielhorn rightly says with reference to it, that 'actual and undoubted proof is here afforded to us of the fact that powerful Hindú rulers of the past were eager to compete with Kálidása and Bhavabhúti for poetical fame.' It appears to me, that this coin of Chandra Gupta's shows that this king also laid claim to the honour of dramatic authorship. The reverse is rather poorly preserved; the legend is श्री विक्रम *śrī Vikrama* with double *kk*.

"Another of the Chandra Gupta coins is of the *Lion Trampler* type. This is also a rare type; there are four varieties, of which the second and third varieties are known only by one specimen each; the first and fourth are not quite so rare. The present specimen belongs to the fourth variety. It is a poor specimen, the legends being almost entirely wanting on both sides.

The third coin of Chandra Gupta is of the *Horseman to Right* type. Its reverse is good, but the legend on the obverse is nearly gone; only *parama-bhaga* ..... *ndra-guptaḥ* being preserved; the legend commences in front of the king's head, running all round the rim and terminating behind his head.

The fourth coin of Chandra Gupta belongs to the *Horseman to Left* type. Of this type there exist two varieties; one, which is not very rare, has the reverse legend *ajita vikrama*; the present coin belongs to this variety. The obverse legend is entirely gone.

Of the Kumára Gupta coins one belongs to the *Archer* type and the Variety II, A. It is not an uncommon variety, and the present coin is a rather poor specimen, the legends on both sides being almost entirely gone.

The three other coins of Kumára Gupta are all of the *Horseman to Right* type. Of this type there exist three varieties, of which the first and third are not uncommon, while the second is very rare. Among the three coins there is one of the second variety, showing on the reverse a goddess sitting on a wicker-stool, stooping forward, with



her left hand resting on her hip, and holding an open flower in her right. The obverse legend on this variety has never been read; nor does the present specimen afford much help; only *द्वयिवी नलाम्बर* *pr̥thivītalām-para* can be read, apparently about one-third of the entire legend. The two other specimens belong to the third variety which shows the same goddess feeding a peacock with her right, while in her left she holds a lotus-flower. One is a rather poor specimen, with nearly the entire legend lost. The other is much better, and apparently preserves the entire legend, in the following, somewhat curious form : *क्षिति* (read *क्षिति*) *पतिरजितो विजयकुमार गु* *Kshitipatir ajito vi[jaya-Kumdra] Gu*. The portion enclosed in brackets is mutilated, the rest is perfect. The legend commences with *kshi* on the right hand margin, between the king's head and the horse's neck; it closes with *gu* close behind the king's head. There is no space for the complementary *aksharas* *प्रः ptaḥ*. The form of the legend, therefore, is here shorter than usual.

The PHILOLOGICAL SECRETARY exhibited a Buddhist chaitya of bronze, which was purchased by the Society from its finder through Bábú Tarakhnáth Roy. It is said to have been found together with two inscribed copper-plates several years ago at the village of Ashrafpur, near Raipur, in the Dacca district, during the process of levelling a mound in the neighbourhood of a tank. One of the copper-plate inscriptions was published by Dr. Mitra, as long ago as 1885 (see *Proceedings* of that year, for March, p. 49). The other copper-plate was purchased by the Society last year from the finder, a villager named Mír *Khán*. It was also being prepared for publication by Dr. Mitra, and will now be published by myself. Both inscriptions are dated in the same year, *viz.*, *Samvat* 13; the first in *Vaiśákha* 13, the other in *Paushadha* 25. There is nothing in the inscriptions to determine to which era the date 13 should be referred. From the shape of the characters, which is that of the so-called *Kuṭila*, the inscriptions may be referred to the eighth or ninth century or perhaps somewhat later. The *Newár* era of *Nepál*, which commences with 880 A. D., might fit the date; and it would then be equivalent to 893 A. D. But this may be left to further determination, hereafter, when the copper-plates are published. It may be noted, however, that the date was wrongly read by Dr. Mitra in 1885, as being *Samvat* 713. What he read as the numeral 7, is really the final consonant *t* of *Samvat*; and the two other symbols are not those for 1 and 3, but for 10 and 3. The symbols are those of the older numeral system of notation, which had separate signs for the units, tens, hundreds, etc., and which was still employed in India for epigraphical purposes as late as the eighth and ninth centuries of the



Christian era. In Nepál it held its ground for a much longer time. The chaitya having been found with the inscriptions is of undoubtedly the same age, and may date from the ninth century. The mound in which the objects were found would seem to mark the ruined site of a Buddhist's shrine. The chaitya is of bronze, and fairly well preserved; it is made of three stories, built up in pyramidal form, consisting of a high, slightly sloping, square basement, on which rises a tall cylindrical dome, surmounted by a small square turret with projecting roof. See Plate III. The whole was originally surmounted by two, or perhaps three, umbrellas of which, however, only the lowermost is preserved. Under this umbrella, attached to its pole, is a minute plate inscribed with the Buddhist creed in (now) illegible characters. The four sides of the turret are adorned with four sitting figures of Buddha, projecting from the walls. Three are in the witnessing and one in the meditating posture. Four other figures are placed round the body of the dome, exactly below the upper figures, within ornamental niches, which are connected with one another with bands and festoons. The basement bears, on each of its four sides, three sitting figures (twelve in all); each triad consisting of one male between two female figures. The figures round the dome probably represent Bodhisattvas, while the basement figures appear to be Buddhist devas and saktis. The chaitya, therefore, already represents Buddhism in the much depraved Tantrik form, in which it was current in Bengal at the time of its extinction.

MR. C. H. TAWNEY called attention to Plate XXXIII, fig. 4, in General Cunningham's *Bharhut Sculptures*, and said, I think that this scene represents the story contained in the 407th Jātaka, Fausböll's edition.

It is called the *Mahākapijātaka*, and the story is as follows:

When Brahmadata was king in Benares, the Bodhisattva was at the head of a troop of eighty thousand monkeys. They used to eat the fruits of a mango-tree on the banks of the Ganges. The Bodhisattva took particular care to prevent the fruits of one branch that overhung the Ganges, from falling into the river. In spite of all his precautions one fruit came into the hands of king Brahmadata, when enjoying himself in the Ganges, and he asked the foresters whence it came. They at once said, that the tree that bore this fruit was to be found in the neighbourhood of the Himálayas. The king took them as guides, and with a large retinue, ascended the river in rafts, and after disembarking, and eating to his fill of the fruits of the tree, he lay down to rest.

In the night the eighty thousand monkeys came and began to

plunder the tree. The king woke up and saw them. He then stationed archers all round the tree with their arrows ready on the string, and told them to let none of the monkeys escape, asserting his intention of breakfasting the next morning off monkey-flesh and mangoes. The monkeys, being terrified, came trembling to the Bodhisattva their king. He told them not to be afraid, as he would save their lives. He then sprang across the Ganges, alighted in a thicket, picked out a creeper, made it smooth, and fastened it to his body. Unfortunately he miscalculated the length of the creeper, not allowing for the portion, that was to pass round his own body. He then made one end of the creeper fast to a tree, and sprang towards the other bank, where he had left his subjects terrified on the mango-tree. Owing to his having miscalculated the required length, he had to catch hold of the mango-tree with his arms. In this position he made a sign to the monkeys to pass over his body, and escape to the other bank. They did so, but Devadatta, who was among the monkeys, and saw an opportunity of injuring his enemy, climbed up to a lofty branch, and sprang with all his force on to the Bodhisattva's back, thus injuring his heart, which is said to have been "split."

It appears to me that so much of the story is clearly represented in the Bharhut Sculpture. The king of the monkeys is seen holding on to the mango-tree. A monkey has just crossed his body, and is crossing the creeper. Another is descending the tree on the other bank. Between the two trees flows a river containing three fish and one tortoise. Many monkeys are seen on the mango-tree. At the top of the mango-tree is seen a monkey with his paws so placed as to make his spring on to the back of the monkey-king as harmful as possible.

This monkey I take to be Devadatta, and I think a comparison of his face with the faces of the other monkeys will show that the artist has succeeded in imparting a particularly malignant expression to it.

The latter part of the story is not clearly represented in the picture. According to the Jātaka, the king, after taking most tender care of the monkey-king, made him lie down, and sitting himself on a low seat, listened to his sermon on the duty of a good king. But in General Cunningham's photograph, the monkey-king appears to be sitting on a stool a little higher than that of the human king. I take it, that the artist has followed a slightly different version of the tale. The king appears to be expressing his admiration for the courage and self-devotion of the monkey-king. The rectangular object brought by two men is supposed by General Cunningham to be a mat. It may be intended for the monkey-king to lie down on. As soon as the monkey-king had finished his sermon on the duty of a king, he died of the blow given by the monkey Devadatta.

After his death the king sent for his ministers, and had a pyre prepared containing a hundred cart-loads of wood. He ordered his wives to attend the funeral clad in red garments, with dishevelled hair, and torches in their hands. After the body was buried, he preserved the skull, and had it worshipped for seven days by the people of Benares on his return. He then erected a *chaitya* over it, and honoured it with perfumes and garlands as long as he lived.

The following papers were read:—

1. *Lamaic Rosaries: their Kinds and Uses.*—By L. A. WADDELL, M. B.

2. *On the date of the Bower Manuscript exhibited at the meetings of November 1890, and April 1891.*—By DR. A. F. RUDOLF HOERNLE.

The papers will be published in the Journal, Part I.

3. *Notes on the Snakes in the Collection of the Indian Museum with descriptions of several new species.*—By W. L. SCLATER, M. A., Deputy Superintendent, Indian Museum.

The paper will be published in the Journal, Part II.

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## LIBRARY.

The following additions have been made to the Library since the meeting held in July last.

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## TRANSACTIONS, PROCEEDINGS AND JOURNALS,

*presented by the respective Societies and Editors.*

Baltimore. Johns Hopkins University,—Circulars, Vol. X, Nos. 89-91.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Deel XXIX Aflevering 1.

———. ————. Tijdschrift voor Indische Taal-, Land-en Volkenkunde, Deel XXXIV, Aflevering 5.

Bordeaux. La Société Linnéenne de Bordeaux,—Actes, Vol. XLIII.

Calcutta. Indian Engineering,—Vol. X, Nos. 1-5.

———. Photographic Society of India,—Journal, Vol. IV, No. 7.

Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarboger, Raekke II, Bind VI, Hefte 1-2.

- Danzig. Der Naturforschenden Gesellschaft in Danzig,—Schriften, Neue Folge, Bandes VII, Heft 4.
- Dorpat. Der Naturforscher-Gesellschaft bei der Universität Dörpat,—Sitzungsberichte, Band IX, Heft 2.
- Havre. Société de Géographie Commerciale du Havre,—Bulletin, Mai-Juin, 1891.
- Jassy. Societății Științifice Și Literare din Iași,—Arhiva, Anno II, No. 9.
- Leipzig. Der Deutschen Morgenländischen Gesellschaft,—Zeitschrift, Band XLV, Heft 1.
- London. Institution of Electrical Engineers,—Journal, Vol. XX, No. 94.
- . Nature,—Vol. XLIV, Nos. 1129-33.
- . The Academy,—Nos. 998-1002.
- . The Athenæum,—Nos. 3321-25.
- . Zoological Society of London,—Proceedings, Part 1, 1891.
- . ————. Transactions, Vol. XIII, Parts 1 and 2.
- Mendon, Illinois. The American Antiquarian and Oriental Journal, Vol. XIII, No. 2.
- New York. The Journal of Comparative Medicine and Veterinary Archives,—Vol. XII, No. 6.
- Paris. La Société de Géographie,—Compte Rendu des Séances, Nos. 13-15, 1891.
- Pisa. La Società Toscana di Scienze Naturali,—Atti, Memorie, Tome XI.
- Rio de Janeiro. Observatorio do Rio de Janeiro,—Revista do Observatorio, Anno VI, No. 5.
- Rome. La Società Degli Spettroscopisti Italiani,—Memorie, Vol. XX, No. 5.
- Taiping. Perak Government,—Perak Government Gazette, Vol. IV, Nos. 17-19.
- Turin. La R. Accademia delle Scienze di Torino,—Atti, Vol. XXVI, Nos. 9-11.

## BOOKS AND PAMPHLETS,

*presented by the Authors, Translators, &c.*

- BÜHLER, G. The new Sanskrit MS. from Mingai (Reprinted from Vienna Oriental Journal, Vol. V, No. 2.) 8vo. Vienna, 1891.
- KIELHORN, F. Die Vikrama Aera. 8vo.
- NURSINGROW, A. V., F. R. A. S., F. R. G. S. Results of Meteorological



- Observations at G. V. Juggarow Observatory, Daba Gardens, Vizagapatam, for 1890, with an introduction. 8vo. Calcutta, 1891.
- SARMA, PANDIT BHIMA SEN. Manavadharma Sástra, Vol. VII, Part 4. 8vo. Allahabad, 1891.
- WOOD-MASON, J., and ALCOCK, A. On the Uterine Villiform Papillæ of *Pteroplatea Micrura*, and their Relation to the Embryo, being Natural History Notes from H. M. Indian Marine Survey Steamer 'Investigator,' Commander R. F. Hoskyn, R. N. commanding. No. 22. (Reprinted from the Proceedings of the Royal Society, Vol. XLIX). 8vo. London.

### MISCELLANEOUS PRESENTATIONS.

Mélanges Asiatiques tirés du Bulletin de L'Académie Impériale des Sciences de St. Pétersbourg, Tome X, Livraison 1. 4to. St. Pétersbourg, 1890.

L'ACADEMIE IMPERIALE DES SCIENCES DE ST. PETERSBOURG.

Proceedings of an Ordinary General Meeting of the Agricultural Society of Burma, held at the Phayre Museum, on Monday, the 29th June, 1891. 8vo.

AGRICULTURAL SOCIETY OF BURMA.

The Bústán of Shaikh Muṣliḥu-d-dín Sa'adí. 8vo. London, 1891.

MESSES. W. H. ALLEN AND CO., LONDON.

Nederlandsch-Indisch Plakaatboek, 1602—1811, door Mr. J. A. Van der Chijs, Deel VIII, 1765—1775. 8vo. Batavia, 1891.

BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.

The Thirty-third Annual Report of the Trade and Commerce of Chicago for the year ending December 31st, 1890. 8vo. Chicago, 1891.

BOARD OF TRADE, CHICAGO.

Annual Report of the Sanitary Commissioner of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Notes of the Annual Statements of the Government Charitable Dispensaries in the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Jails of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Judicial Administration (Criminal) of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Lunatic Asylums of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Report on the Police Administration of the Central Provinces for the year 1890. Fcp. Nagpur, 1891.

Resolution on the Management by Government of Private Estates in

the Central Provinces for the year ending the 30th September, 1890.  
Fcp. Nagpur, 1891.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Contributions to Canadian Palæontology, Vol. I, Part 3. By J. F. Whiteaves. 8vo. Montreal, 1891.

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.

Annual Report on Inland Emigration for the year 1890. Fcp. Calcutta, 1891.

Annual Report on the Police Administration of the Town of Calcutta and its Suburbs for the year 1890. Fcp. Calcutta, 1891.

Reports on the Alipore and Hazaribagh Reformatory Schools for the year 1890. Fcp. Calcutta, 1891.

GOVERNMENT OF BENGAL.

Copies of Despatches from the Secretary of State in Council to the Government of India, dated the 13th day of May and the 3rd day of July, 1890, relating to "the Amendment of the Indian Factory Act, 1879." Fcp. London, 1891.

Report of the Indian Factory Commission, appointed in September, 1890, under the Orders of His Excellency the Governor-General in Council, with Proceedings and Appendices. Fcp. London, 1891.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

Dr. E. Hultzsch's progress report of the Archæological Survey, Madras from October, 1890 to March, 1891. Fcp. Madras, 1891.

GOVERNMENT OF MADRAS.

Final Report on the Revision of Settlement of the Sirsá District in the Punjab, 1879-83, and maps to accompany the Report. 8vo. Lahore, 1891.

Report on the Sanitary Administration of the Punjab for the year 1890. Fcp. Lahore, 1891.

GOVERNMENT OF THE PUNJAB.

Report of the Commissioners appointed to inquire into the origin, nature, etc. of Indian Cattle Plagues, with Appendices, 1871. Fcp. Calcutta, 1891.

Reports on the Settlement Operations in the District of Azamgarh: as also in Parganas Sikandarpur and Bhadaon. Fcp. Allahabad, 1881.

DR. A. F. RUDOLF HOERNLE.

Catalogue of Mammalia in the Indian Museum, Calcutta, Part II. By W. L. Selater. 8vo. Calcutta, 1891.

Indian Museum Notes, Vol. I, No. 5. Containing Title Page, List of Contents, and Index to Vol. I.

INDIAN MUSEUM.

Administration Report of the Marine Survey of India for the official year 1890-91. Fcp. Bombay, 1891.

MARINE SURVEY OF INDIA.

Memorandum on the snowfall in the mountain districts bordering Northern India and the abnormal features of the weather in India during the past five months, with a forecast of the probable character of the south-west monsoon rains of 1891. By John Eliot. Fcp. Simla, 1891.

METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

Bulletin of the Microscopical Society of Calcutta, Vol. I, No. 7.

MICROSCOPICAL SOCIETY OF CALCUTTA.

Esboço de uma Climatologia Do Brazil por H. Morize. 8vo. Rio de Janeiro, 1891.

OBSERVATORIO DO RIO DE JANEIRO.

Annual Report of the Provincial Museum Committee, Lucknow, for 1890-91. Fcp. 1891.

PROVINCIAL MUSEUM, LUCKNOW.

Smithsonian Miscellaneous Collections, Vol. XXXIV, Article I. A Clinical Study of the Skull. By Harrison Allen, M. D. 8vo. Washington, 1890.

———. ———. Article II. Index to the Literature of Thermodynamics. By Alfred Tuckerman, Ph. D. 8vo. Washington, 1890.

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SMITHSONIAN INSTITUTION, WASHINGTON.

Account of the Operations of the Great Trigonometrical Survey of India. Vol. XIV. 4to. Dehra Dun, 1890.

SURVEYOR GENERAL OF INDIA.

Obituary Record of Graduates of Yale University, deceased during the academical year ending in June, 1891. 8vo.

Report of the Yale University for the year 1890-91.

YALE UNIVERSITY.


PERIODICALS PURCHASED,

Allahabad. North Indian Notes and Queries,—Vol. I, No. 4.

Braunschweig. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften, Heft III, 1888.

Calcutta. Calcutta Review,—Vol. XCIII, No. 185.

———. Indian Medical Gazette,—Vol. XXVI, No. 7.

- Geneva. Archives des Sciences Physiques et Naturelles,—Tome XXV,  
No. 6.
- Leipzig. Annalen der Physik und Chemie,—Band XLIII, Heft 3.  
———. ————. Beiblätter, Band XV, Stück 6.
- London. The Chemical News,—Vols. LXIII, Nos. 1646-48; LXIV,  
1649-51.
- Paris. Revue Scientifique,—Tomes XLVII, Nos. 25 et 26; XLVIII,  
1-3.
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COPPER BUDDHIST CHAITYA FROM ASHRAFPUR IN BENGAL.

PHOTOZINOGRAPHED AT THE SURVEY OF INDIA OFFICES, CALCUTTA.



PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR NOVEMBER, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th November, 1891, at 9 P. M.

DR. W. KING, B. A., in the chair.

The following members were present :—

Bábu Sarat Chandra Dás, The Most Rev. Dr. Paul Goethals, Rev. H. B. Hyde, C. Little, Esq., Kumár Rameswár Maliáh, T. R. Munro, Esq., J. D. Nimmo, Esq., W. L. Selater, Esq., C. H. Tawney, Esq., C. R. Wilson, Esq.

Visitor :—Dr. W. W. Sheppard.

The minutes of the last meeting were read and confirmed.

One Hundred and Thirty-seven presentations were announced, details of which are given in the Library List appended.

The SECRETARY reported that the following gentlemen had been elected Ordinary Members of the Society during the recess, in accordance with Rule 7 :—

H. C. Mallik, Esq.

Dr. E. H. Brown.

Dr. M. A. Stein.

Diego Ernst, Esq.

Edgar Thurston, Esq.

The following gentleman is a candidate for election at the next meeting :—

A. Mervyn Smith, Esq., C. E., F. S. A., proposed by W. H. Miles, Esq., seconded by Dr. W. King.



The following gentleman has expressed a wish to withdraw from the Society :—

W. H. Lee, Esq., C. S.

The SECRETARY reported the death of the following member :—

Surgeon-Major A. Barclay, I. M. S.

The PRESIDENT read the following obituary notice :—

Surgeon-Major A. Barclay, an active member of this Society, died of typhoid fever at Simla on the 2nd August. He was only 39 years of age. His loss is deeply regretted by his own service and it is intended to perpetuate his memory by means of some permanent monument. In a public letter the present Surgeon General with the Government of India says of Dr. Barclay, who was his Secretary :—" No one can know as I do how much the service is indebted to Barclay. On all occasions, when questions affecting its welfare came up for discussion, his first thought was for the preservation of the honor and dignity of it as a body, and for the safe-guarding of the interests of individual members. In this, for a man ordinarily kindly, gentle and dispassionate, he was fearless in giving expression to his views and never hesitated to put them forward in forcible language." This is high but well deserved praise. To us Dr. Barclay's work as a member of this Society is of the greatest interest. His general knowledge was wide, but his leisure time was specially devoted to the study of parasitic fungi of the order *Uredineæ*. Upon subjects connected with these fungi Dr. Barclay published eight papers in the *Scientific Memoirs* by officers of the Indian Medical Service ; seven papers in the *Journal of the Asiatic Society of Bengal* and others in the *Annals of Botany*, *The Journal of Botany*, *The Transactions of the Linnean Society* and in the *Journal of the Bombay Natural History Society*. He was a good draughtsman and photo-micrographer and most of his papers were accompanied by excellent plates. It will be seen therefore that Dr. Barclay was an untiring worker and apart from the purely scientific interest attached to his writings he will be remembered as one who has done well by shewing the public the nature of fungi destructive to crops and by suggesting remedies. It was intended to send Dr. Barclay to the South of India to investigate the *Coffee disease*, an undertaking which would have been full of interest to him and to the scientific world and of benefit to the coffee planters. His last scientific work, before his death, was connected with the Leprosy Commission, whose report will soon appear and we may rest assured that his contributions to the work will be found marked by that energy and honesty which was so characteristic of the man.

The PHILOLOGICAL SECRETARY read the following reports on finds of Treasure Trove Coins :—

I. Report on 213 old Rupees forwarded by the Deputy Commissioner of Multán, with his No. 550, dated the 13th August, 1890.

The Deputy Commissioner's letter states that at the end of August 1889 a vessel containing 400 rupees of some ancient mintage was found by two men in a field. Of these 187 rupees were melted down by the finders, before proceedings could be taken under the Treasure Trove Act. The balance of 213 rupees was forwarded to me for identification and report. Their value is stated to be Rs. 217 according to the current coinage.

Of these 213 rupees, 178 are Mughal, and 33 Affghan, one is a Persian and one a Sikh coin. They are mostly in fair condition.

They are classified as follows :

I. MUGHAL RUPEES.

1, *Aurangzib* : 1068—1118 A. H. = A. D. 1658—1707.

Usual type ; mints : Lahor, Etáwah, Multán, Tattah,

Súrat, Ajmír, Sháhjahánábád, ..... 22

2, *Bahádur Sháh 'Alam*, 1118—1124 A. H. = 1707—

1712 A. D. .... 11

3, *Farrokh Siyar*, 1124—1131 A. H. = 1712—1719 A. D.

Usual type : ..... 11

4, *Rafiu-d-darjât*, 1131 A. H. = 1719 A. D. .... 2

5, *Sháh Jahán II.*, 1131 A. H. = 1719 A. D. .... 1

6, *Muhammad Sháh*, 1131—1161 A. H. = 1719—1748

A. D.

Type I : "Šáhib Airán" ; mint : Sháhjahánábád.... 63

Type II : "Bádsháh Ghází" ; several varieties : ... 51

7, *Aḥmad Sháh Bahádur*, 1161—1167 A. H. = 1748—

1754 A. D.

Usual type ..... 14

8, *'Alamgír Zání*, 1167—1173 A. H. = 1754—1769 A. D. 3

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Total Mughals ... 178

II. AFFGHÁN RUPEES : (Durrání Dynasty) :

1, *Aḥmad Sháh*, 1160—1182 A. H. = 1747—1772 A. D.

as in Jour., As. Beng., vol. LIV, p. 67 ..... 18

2, *Tímúr Sháh*, 1187—1207 A. H. = 1773—1783 A. D.

as in Numism. Chronicle, vol. VIII, p. 336, ..... 15

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Total of Durranis ... 33

## III. Persian coin :

*Nádir Sháh*, 1148—1160 A. H. = 1736—1747 A. D.

As in Numism. Chron., vol. II, p. 322. Mint:

Sháhjahánábád, date 1152 ..... 1

## IV. Sikh Rupee :

*Ranjit Singh*, 1799—1839 A. D.

As in Journal A. S. B., vol. L, p. 85. Mint: Amritsar,

date 1869 Samvat ..... 1

Grand total of all coins ... 213

II. Report on 142 old sicca coins forwarded by the Deputy Collector of Chittagong, with his No.  $\frac{2194}{xix-56}$  G, dated 27th January, 1891.

The Offg. Collector of Chittagong in his report on these coins to the Commissioner of the Chittagong division states they were found somewhere in the village of 'Joogkhalla,' in Thannah 'Fattickaurry.' The date of the finding could not be ascertained.

All the coins are rupees of English mintage, such as were coined between 1793 and 1818, under the Regulations of 1793, in Calcutta and the subordinate mints of the Bengal Presidency. They are known as "19th san" Rupees, nominally from the Murshidábád, but really from the Calcutta mint, recognisable by their oblique milling.

III. Report on 15 old silver coins, forwarded by the Deputy Commissioner of Rawalpindi, with his No. 913G, dated 1st June 1891.

The coins are stated by the Deputy Commissioner to have been found in the Fateh Jang Tahsil; no further particulars are given.

They comprise 5 Mughal, 9 Durrání and one Sikh rupees, and are classified as follows :

## I, Mughal Rupees :—

1, FARROKH SIYAR, ordinary type, ..... 1

2, MUHAMMAD SHÁH, *Sahib Qirán* type, ..... 4

Total Mughal ... 5

## II, Durrání Rupees :—

1, TAIMÚR SHÁH, 1187—1207 A. H. = 1773—1793 A. D.

a, ordinary type of Mughal rupee, mint *Atak* ..... 1

b, Kábulí type; mint *Kábul* and *Hirát* (Num. Chr. VIII, 3)..... 2

2, ZAMÁN SHÁH, 1207—1216 A. H. = 1793—1801.

a, Kábulí type, one variety, as in Num. Chron. VIII, No. 59, mint Pesháwar ..... 1

b, Kábulí type, another variety, as in Num. Chron. VIII, No. 70, mint Pesháwar, date 1211 ..... 2

|                                                                                                                 |   |
|-----------------------------------------------------------------------------------------------------------------|---|
| 3, SHUJÁ'U-L-MULK, 1216—1258 A. H. = 1801—1842 A. D.                                                            |   |
| Kábulí type, mint Pesháwar .....                                                                                | 1 |
| 4, MAḤMÚD SHÁH, 1216—1245 A. H. = 1801—1829 A. D.                                                               |   |
| <i>a</i> , Kábulí type, one variety, as in Num. Chron. VIII,<br>No. 82, mint Aḥmadsháhi, date 1217 .....        | 1 |
| <i>b</i> , Kábulí type, another variety, as in Num. Chron.<br>VIII, No. 85, mint Dáru-s-Saltanat Hirát, 1218... | 1 |

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Total Durránís ... 9

### III, Sikh Rupee :

|                                                |   |   |
|------------------------------------------------|---|---|
| RANJIT SINGH, mint Amritsar, Samvat 1868 ..... | 1 | 1 |
|------------------------------------------------|---|---|

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Grand total Rupees ... 15

IV. Report on 29 old silver coins, forwarded by the Offg. Collector of Pubna, with his No. 372, dated 15th June 1891, and No. 561, dated 28th July 1891.

The exact locality of the find of these coins is not stated in the Collector's letter; they are supposed to have been found sometime in February or March 1891. Some more coins appear to have been found, but broken and melted into bars by the finders. Their value is stated to be about Rs. 32-8.

The coins include 4 of Paṭhán Sultáns of Delhi and 24 of the so-called Independent Sultáns of Bengal. They may be classified as follows :—

#### I, Paṭhán Rupees :

|                                                                                                                                                         |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1, SHER SHÁH, 947—952 A. H. = 1540—1545 A. D.                                                                                                           |   |
| Type : square areas, date 946 .....                                                                                                                     | 1 |
| 2, ISLÁM SHÁH, 952—960 A. H. = 1545—1552 A. D.                                                                                                          |   |
| Type <i>a</i> : circular areas ; a new variety of No. 361 <i>a</i><br>in <i>Thomas' Chronicles</i> ; date 952 to be read<br>from within ; no mint ..... | 1 |
| Type <i>b</i> : square areas, dates 956, 960, two inferior<br>specimens .....                                                                           | 2 |

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Total Paṭhán ... 4

#### II, Independent Sultán's of Bengal :

|                                                            |   |
|------------------------------------------------------------|---|
| 1, 'ALÁU-D-DÍN ḤUSAIN SHÁH, 899—925 A. H. = 1493—<br>1518. |   |
| <i>a</i> , Type, as in Brit. Mus. Cat., Nos. 123—130 ...   | 3 |
| <i>b</i> , Type, as in Marsden DCCLXXIX .....              | 3 |
| <i>c</i> , Type, unpublished .....                         | 1 |



|                                                                                                                          |       |
|--------------------------------------------------------------------------------------------------------------------------|-------|
| 2, NAṢIRU-D-DÍN NAṢRAT SHÁH, 925—939 A. H. = 1518—1532 A. D.                                                             |       |
| <i>a</i> , Type, as in Brit. Mus. Cat., No. 137 .....                                                                    | 1     |
| <i>b</i> , Type, as in Brit. Mus. Cat., Nos. 139, date 925                                                               | 8     |
| 3, GHİYÁṢU-D-DÍN MAḤMÚD SHÁH III, 933—944 A. H. = 1532—1537 A. D.                                                        |       |
| Type as in Brit. Mus. Cat., No. 147 .....                                                                                | 3     |
| 4, GHİYÁṢU-D-DÍN BAHÁDUR SHÁH, 962—968 A. H. = 1554—1560 A. D., type: square areas, as in Brit. Mus. Cat., No. 155 ..... | 4     |
| 5, GHİYÁṢU-D-DÍN JALÁL SHÁH, 968—971 A. H. = 1560—1563 A. D., as in Brit. Mus. Cat., No. 153, dated 970                  | 1     |
|                                                                                                                          | <hr/> |
| Total Bengal                                                                                                             | 24    |

## III, Mughal Rupee:

|                                                                                                                         |       |
|-------------------------------------------------------------------------------------------------------------------------|-------|
| 1, SHÁH JAḤÁN, 1037—1068 A. H. = 1627—1658 A. D., type: two square areas, ordinary, date 1047, 10, mint illegible ..... | 1     |
|                                                                                                                         | <hr/> |
| Grand total coins ...                                                                                                   | 29    |

V. Report on 792 old copper coins forwarded by the Offg. Collector of Monghyr, with his No. 721R, dated the 1st August 1891.

The coins are stated to have been found in January 1889, buried in the garden of Hazari Shahú of Mouza Bargazar, Pargáná Salimábád, outpost Lakhí Sarai.

A very large number of the coins are not in a sufficiently good state of preservation to be fully identified; but they all belong to the coinage of the Sultáns of Jaunpur, and to the so-called "second size" of their copper coins, as described in the Catalogue of the British Museum on the *Coins of the Muhammadan States of India*, p. 89. Of these copper coins, there are two types: one with simple lettered surfaces, the other with a circular area on the reverse. The former is a very common type; the latter is rather rare. The coins, under review, all belong to the common type. Four of them together weigh  $1\frac{1}{2}$  tolá, and six of them are equal to one anna, or each of them is equal to 2 pice (1 pice =  $\frac{1}{12}$  anna).

Those specimens, that I have been able to identify, are thus distributed:

|                                                                                                         |    |
|---------------------------------------------------------------------------------------------------------|----|
| 1, IBRÁHÍM SHÁH, called <i>Sharqí</i> , A. H. 803—844 = A. D. 1400—1440; like B. M. Cat., Nos. 238, ... | 86 |
| 2, MAḤMÚD SHÁH, bin Ibráhím, A. H. 844—861 = A. D. 1440—1456; like B. M. Cat., No. 273, ...             | 98 |

|                                                     |        |
|-----------------------------------------------------|--------|
| 3, MUHAMMAD SHĀH, bin Maḥmūd, A. H. 861—863 = A. D. |        |
| 1456—1458; like B. M. Cat., No. 301,                | ... 37 |
| 4, HUSAIN SHĀH, bin Maḥmūd, A. H. 863—900 = A. D.   |        |
| 1458—1500; like B. M. Cat. No. 327,                 | ... 59 |
|                                                     | <hr/>  |
| Total ...                                           | 280    |
| Unserviceable coins :—                              | 512    |
|                                                     | <hr/>  |
| Grand total ...                                     | 792    |

MR. C. H. TAWNEY read the following note :—

I do not think attention has ever been drawn to the fact that in Indian tales the royal dignity is often described as bestowed by lot. At any rate this appears to have frequently taken place, when a king died without leaving male issue. In the Kathā Sarit Sāgara, Taranga 65, we read that it was the custom in a certain country, when the king died, to turn loose an elephant, and any man that he took up with his trunk, and placed on his back, was anointed king.

In the Kathā Kośa, a collection of edifying tales written in Jaina Sanskrit, an excellent manuscript of which has been kindly lent to me by the Principal of the Sanskrit College, a slightly different method is described. We read in the story of Devapāla, the second story in this work, that the king of a certain city died of cholera, and left no male issue. "As there was no son to succeed him, the ministers appointed an elephant, and fastened to its temples a pitcher of water, and let it go. It found the servant, named Devapāla, asleep under a *pīpal*-tree, and emptied the pitcher on his head. They bestowed on him the kingdom."

In this way the servant was rewarded for showing devotion to a stone image of the Jina, that he found in a river.

In the story of Amaradatta and Mitrānanda, the 20th story in the Kathā Kośa, we find the following account given of the election of a king at Pāṭaliputra :

"Now it happened that the king of that city died in the course of the night, without leaving issue. Then the ministers had recourse to the five ordeals, (*divyōni*). The mighty elephant came into the garden outside the city. There the elephant sprinkled prince Amaradatta and put him on his back. Then the horse neighed. The two chowries fanned the prince. An umbrella was held over his head. A divine voice was heard in the air, 'Long live king Amaradatta.'"

It happens that in this particular case the person chosen was by birth a prince, and was roaming about *incognito*. But this is merely a piece of folk-lore justice.

The above extract may be supported by another from the tale of Viráṅgada and Sumitra, which is an episode in the tale of Ratnaśikha, the 69th in the Kathá Kośa. It runs as follows :—

“The king of the city of Mahásála died without a son. Then the barons had recourse to the five ordeals of the elephant, the horse, and so on. The elephant came into the city park trumpeting. Then he sprinkled the prince, named Viráṅgada, with the water of inauguration, and taking him up in his trunk, placed him on his forehead, (*kumbha-sthala*). All the barons, and the chief ministers, and the other ministers, and the crowd with them bowed before the king, and exclaimed ‘Long live the king!’”

The five ordeals are described even more clearly in a passage in the story of Múladeva, the eighth in Professor Jacobi’s “*Erzählungen in Maháráshtrí*,” or “*Tales in Maháráshtrí Prákrit*.”

The story is said by the editor to be taken from Devendra’s Commentary on the Uttarádhyayana Súra. The passage may be thus translated :—

“At this juncture the king of the city died without leaving a son. They then had recourse to the five ordeals, (or instruments of selection, Prákrit *divváni*). These roamed about in the city, and went outside it. They came to Múladeva. He was found sleeping in the shade of the *champaka*-tree. On seeing him the elephant trumpeted, and the horse neighed : he was sprinkled by the pitcher and fanned by the chowries, and the umbrella stood over him.”

It is remarkable in this connexion that Darius, son of Hystaspes, is said to have been chosen king of the Persians owing to the neighing of his horse, it having been agreed by the seven conspirators who destroyed the usurper Šmerdis, that the one of them, whose horse neighed first, should become king.\*

It seems probable that this story points to a Persian custom resembling that which prevailed in India.

Indeed it appears that even in the latter country it was the custom occasionally, to dispense with the elephant, and to rely upon the horse as the sole instrument of selection.

This is proved by the following passage taken from another story in Dr. Jacobi’s collection, the story of the Pratyeka Buddha Karakaṇḍu :

“The three fled and reached Kánchanapura. There the king died without male issue. A horse was let loose, and came near Karakaṇḍu,

\* Herodotus (Book III, cc. 83—87) tells us that the success of Darius was due to an artifice of his groom ; but at the same time he asserts that the neighing of the horse was accompanied by thunder and lightning from a clear sky. It is possible that artifice was not always absent in similar cases in India.

as he was sleeping outside the city. The horse circumambulated him and stood still. The citizens observed with awe that he possessed the auspicious marks of a king. They raised a shout of triumph and beat drums of rejoicing. He rose up yawning."

It is worthy of note that according to Herodotus, the seven conspirators agreed to decide the question of succession, by observing whose horse neighed first in the suburb, (*πρόδορειον*) at sunrise. This constitutes a further similarity between the Indian custom, and the custom which I suppose to have existed in Persia. It seems natural that both horses and elephants should be employed in India in choosing kings, as Strabo tells us (Book XV, c. 41) that "no private person is allowed to keep a horse or an elephant. The possession of one or the other is a royal privilege, and persons are appointed to take care of them."

The passages which I have quoted are taken with one exception from Jaina works. But I find a trace of a similar custom in the Darímukhajátaka, (Fausböll, Vol. III, p. 238). In this Játaka we read that on the seventh day after the death of the king of Benares without male issue, the *purohita* sent out the *phussaratho*. The word *phussaratho* is explained in Childers's Pali Dictionary as meaning simply "chariot." In Sanskrit the word *pushyaratha* is said to mean a pleasure-chariot, as opposed to a war-chariot. We are told in the Pali text that the custom of the *phussaratho* will be explained in the Mahájana-játaka, but I have not been able to find this Játaka in the three volumes published by Fausböll. The *phussaratho* left the city of Benares surrounded by an army of elephants, cavalry, chariots and infantry, and with the beating of many drums, arrived at the gate of the king's garden, in which the two heroes of the tale, the Bodhisattva and his friend Darímukha were sitting. Darímukha knew, as soon as he heard the sound of the drums, that his friend the Bodhisattva would shortly be elevated to the royal dignity, and as he preferred the life of a wandering religious mendicant, he immediately left the garden, for fear that his friend might appoint him commander-in-chief. The *purohita* entered the garden, and finding the Bodhisattva sitting on the auspicious stone, and seeing that he possessed the auspicious marks which entitled him to govern even the four *dvípas*, and being satisfied with certain indications of his character, informed him that the crown had fallen to his lot. The Bodhisattva, when he had satisfied himself that the late king had died without male issue, accepted the throne, and his coronation (or rather sprinkling) took place then and there. I own that in this last case the appeal to divination seems to have degenerated into a mere formality.

Of course the collections of Indian tales, from which I have made extracts, contain incidents and plots common to the folk-lore of many



countries. But I think that the institution of the five ordeals must have been a custom widely recognised in this country, as otherwise no narrator would have introduced such a minute account of it into tales intended for Indian readers.

No doubt scholars whose acquaintance with ancient Indian literature is wider than my own, will be able to throw fresh light on the subject.

The following papers were read :—

1. *Natural History notes from H. M's. Indian Marine Survey Steamer "Investigator,"* Commander R. F. HOSKYN, R. N., commanding. No. 25. *The Vegetation of the Coco Group.*—By D. PRAIN.

[Abstract.]

The Cocos consist of three islands extending over a space of 15 miles, lying 30—45 miles north of Landfall, the northmost island of the Andaman main group. These islands were visited by the writer when the "Investigator" was surveying there in December 1889 and in November 1890. All three islands were visited and a collection of plants made. This paper describes the collection. It consists of three parts ;

1. A sketch of the vegetation of the group with an account of the relationship this bears to the physiographical features of the group.

2. A list of the species collected ; with notes on their habitat, distribution, and, occasionally, their systematic position.

3. An enquiry into the nature, distribution and probable origin of the Flora.

The plants collected comprise 358 species distributed among 268 genera and 95 natural orders, 297 species being Phanerogams and 61 Cryptogams—a proportion of 4·85 to 1.

Among the Phanerogams 238 are Dicots and 59 are Monocots—a proportion of 4 to 1.

Among the Dicots the *Polypetalæ* equal the rest of the groups in number, a somewhat unusual circumstance. The most extensively represented natural order is *Leguminosæ* (34 sp.) ; after a long interval come *Euphorbiaceæ* and *Gramineæ* (15 sp. each) ; *Convolvulaceæ* (14 sp.) ; *Rubiaceæ*, (13 sp.) ; *Urticaceæ*, (11 sp.) ; *Cyperaceæ*, (10 sp.). No other natural order, except *Filices*, (10 sp.), has more than 8 sp. and 24 of the natural orders have but one species each.

The non-vascular species (Lower cryptogams—*Algæ*, *Fungi*, and *Lichens*) number 46 ; of the remaining 312 sp., 234 are erect and 78 are climbers—a proportion of 3 to 1.

Of erect species 142 are woody, 92 are herbaceous ; among climbers 35 are woody, 43 are herbaceous—a proportion in the first case of 3 to 2 and in the second of 4 to 5. Of the climbing species 20, or 25%, are armed.

As regards distribution:—70 are cosmopolitan in the tropics, 10 more are present in the tropics of both hemispheres, but are scarcely cosmopolitan; 49 are widely distributed in the eastern hemisphere; 41 are confined to Asia and Australasia; and 188 are confined to South-eastern Asia.

As regards more local distribution: 252 species extend to India, or Ceylon, or both; 153 species extend to Australia; 140 species to China.

The islands lie so to speak intermediate between the Indo-Chinese and Malayan phytogeographic districts and the following is the occurrence of species within these:—confined, so far as is yet known, to the Coco Group, 13; occurring in the Andamans, 324 (90%); occurring in Malaya, 275 (76%); in Tenasserim, 259 (72%); in Indo-China, 256 (71%). We conclude therefore that the group forms phytogeographically part of the Andamans and that in its flora a Malayan influence predominates slightly over the Indo-Chinese.

Examined with a view to ascertaining more precisely the probable origin of the flora we find that of species which may possibly have been introduced (not thereby necessarily implying that they are *not* indigenous but simply pointing out that it is not *essential*, in order to account for their presence, to postulate a connection of the islands with neighbouring land) the list contains 288, as opposed to 70 that seem to require the conception some former land-connection in order to explain their occurrence. The proportion of *Migrant* (possibly introduced) species to *Remanent* (certainly indigenous) species is therefore 4 to 1. The remanent species indicate that the most recent former land-connection may have been with Indo-China.

Of the introduced species 33 are “civilized” plants, cultivated plants or weeds, introduced voluntarily or involuntarily by man; 94 have been perhaps introduced by birds (assisted perhaps slightly by frugivorous bats); 60 have been introduced by winds; 101 by the sea.

Of the sea-introduced species 21 are marine plants, 80 are littoral species; they appear to have come wholly from Malayan seas. The wind-introduced species indicate that it is the north-east (not the south-west) monsoon which is the more important factor. This might be expected since the latter blows over a wide expanse of ocean to these islands, while the former, though not so strong, blows steadily for some months each year from the direction of the nearest land. The bird-introduced species are of two kinds:—Those attached externally to the bodies of birds and those carried in the crops of birds. Of the first kind there are two sub-groups: *a.* those attached immediately to their bodies by reason of the fruits being viscous or being provided with barbs or

hooklets to their seeds or fruits; of this kind there are possibly 9 species: *b.* by means of other substances, *e. g.*, spiders-webs, or mud, as in the case of swimming and wading birds; of this kind there are 16.

Those carried in the crops of birds are also of two different kind: *a.* those introduced by frugivorous birds (perhaps also partly by bats), where the fruits are eaten on account of their pulp and the seeds, though swallowed, are voided uninjured; of this kind there are 55. This mode of introduction is an every-day result of the mode of life of the creatures concerned: *b.* those introduced by grain- and seed-eating birds, where introduction can only happen when the bird that brings the seed or grain falls a victim, on arrival, to some bird or beast of prey; this may happen in the case of any migrating bird when it arrives fatigued after a lengthened flight, and must also happen to a certain proportion of the birds that are driven, numbed or injured, to the land by storms. Of this kind there are perhaps 14 species.

The paper will be published in full in the Journal, Part II.

2. *List of Diptera of the Oriental region*, Part II,—By MONS. J. M. F. BIGOT. *Communicated by* THE NATURAL HISTORY SECRETARY.

The paper will be published in the Journal, Part II.

3. *On a symbolical coin of the Wethdli dynasty of Arakan*,—By W. THEOBALD, M. R. A. S. *Communicated by* DR. W. KING.

4. *Græco-Roman Influence on the Civilization of Ancient India (Second Paper)*,—By VINCENT A. SMITH, M. R. A. S., *Bengal Civil Service*.

The papers will be published in the Journal, Part I.

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## LIBRARY.

The following additions have been made to the Library since the meeting held in August last.

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PROCEEDINGS  
OF THE  
ASIATIC SOCIETY OF BENGAL,  
FOR DECEMBER, 1891.

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The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd December, 1891, at 9 P. M.

J. WOOD-MASON, Esq., Vice-President, in the chair.

The following members were present :—

Bábu Gaurdás Bysack, Hon. Sir A. W. Croft, Bábu Saratchandra Dás, G. C. Dudgeon, Esq., The Most Rev. Dr. Paul Goethals, Dr. A. F. R. Hoernle, T. H. Holland, Esq., Rev. H. B. Hyde, C. Little, Esq., C. J. Lyall, Esq., Kumár Rameswár Maliáh, W. H. Miles, Esq., Bábu Asutosh Mukhopádhyáy, T. R. Munro, Esq., L. de Nicéville, Esq., R. D. Oldham, Esq., Pandit Haraprasád Shástri, C. H. Tawney, Esq., Dr. E. Thurston, Col. J. Waterhouse, C. R. Wilson, Esq.

Visitor :—Rev. Dr. K. S. Macdonald.

The minutes of the last meeting were read and confirmed.

Forty-four presentations were announced, details of which are given in the Library List appended.

The following gentleman duly proposed and seconded at the last meeting of the Society, was ballotted for and elected an Ordinary Member :—

A. Mervyn Smith, Esq., C. E., F. S. A.

The following gentlemen are candidates for election at the next meeting :—

Lieutenant Wolseley Haig, Benares, proposed by Col. H. S. Jarrett, seconded by C. Little, Esq.



J. Woodburn, Esq., C. S., Allahabad, proposed by C. H. Tawney, Esq., seconded by C. Little, Esq.

Bábu Gerindranath Dutt, Hutwa Raj, proposed by Pandit Mahes-chandra Nyáyaratna, seconded by C. Little, Esq.

H. K. W. Arnold, Esq., Calcutta (for re-election), proposed by L. de Nicéville, Esq., seconded by C. Little Esq.

H. N. Thompson, Esq., Monywa, proposed by W. L. Sclater, Esq., seconded by Dr. W. King.

The following gentleman has expressed a wish to withdraw from the Society:—

Denzil Ibbetson, Esq., C. S.

The following papers were read:—

1. *The Antiquities of Belwa-Sirsea*,—By GERINDRANATH DUTT, SUPERINTENDENT OF THE HUTWA RAJ. Communicated by the PHILOLOGICAL SECRETARY.

Ever since my lot was cast to serve this Ráj, I have been labouring under the impression that this very ancient Ráj is replete with objects worthy of an antiquarian's research. The situation of the temple and forest at Thaway and the site of the Hosseypore forts (old capital of the Hutwa Mahárájas), and the winter tour diary of my predecessor, the former Superintendent of the Hutwa Ráj, who is now the Manager, framed this belief into a conviction which was strengthened by learning of the Lauriya-Araraj and Lauriya-Navandgarh pillars in the neighbouring Ráj of Bettiah from Cunningham's *Corpus Inscriptionum Indicarum* (Vol. I, p. 4). Only the other day I issued orders to all native Thikadárs and Putwaries of the villages to inform me at once if they know or hear of the existence of any relic of antiquity; and the reports received from various quarters of this extensive estate made me sanguine of success. The most interesting of these reports is the one received from the Putwary of Belwa Bhaya, a village in lease to the Moniarah Factory, about 6 miles north-west of the sub-division of Gopalgunge and 18 miles from the Hutwa Palace. I could not make time to see the place through press of work till the 3rd instant, when I set out for the place having previously sent a sowar to catch hold of the Putwary and keep him waiting at the Gopalgunge road to lead me to the place.

As we neared the place the existence of very old *Bar* and *Pípal* trees on the sides of the road led me to conclude that we were entering a place of some antiquity. Our camp was pitched at some distance from the spot, but without halting there for rest, notwithstanding the fatigue of a drive over 18 miles of road only partly metalled, we drove direct to

the spot, which is a small jungle of about a bighá, circumscribed by cultivated fields. There under a Pípal tree (which does not appear to be as old as the antiquities themselves) stands a big image of Buddha Gautama, which was formerly buried under a mound of earth and is not yet wholly dug out. Although the Putwary in his report had stated this to be a *Bhairoji's Múrti*, as called by the ignorant villagers, from the description given in it I was at once convinced, even before seeing the spot, that the antiquities must be of a Buddhistic and not Brahmanical period. The length of the whole image, excluding the pedestal and including the arched top which much resembles a *chalchitra* (चालचित्र), is 6', 5" and breadth 3', 4". The figure itself measures 3', 10" from the feet to the mutilated head. It is in a standing posture, having its head cut off down to the chin and both hands mutilated, showing the vandalism of fanatics on the revival of Brahmanism. On both sides of the figure are carved figures of lions and elephants ridden by male human forms measuring 1', 2". Below this are figures of two women about 2 feet in length, having their hands and heads mutilated. The arched top is finely ornamented with decorations. In its middle is the half mutilated face of some form much resembling that of a dragon or *Nṛisimha*, having on its both sides the forms of two fairies flying with folded hands but with mutilated faces. The pedestal on which the image stands has got in its cornice finely carved male human figures in kneeling postures with folded hands. The whole image is carved out of a single block of black marble, and stands on a block reported to have taken root deep in the ground.

Besides this image of Buddha we found, lying on the ground, door-frames, said to have been excavated by some Sádhu. The two door-jambs measure 5' 2"  $\times$  10'  $\times$  7', having eight human figures, all in different postures, and beautifully interlacing cornices. The biggest of these figures is 7 inches and others 5 inches. The two jambs correspond to each other in every particular. The top sill measures 5' 1" (broken)  $\times$  1' 2"  $\times$  8½", and shows the figure of Buddha in *Padmásan* under an arcade. The face and right hand of the figure are mutilated, and the left hand is counting *mantras*. It has very beautifully carved cornices with mouldings. There are several human figures in the uppermost cornice, which is divided into ten little columns each containing two human figures playing musical instruments. On both the extremities are two large figures with mutilated faces.

The bottom sill measures 6' 10" in length of which 5 feet 1 inch is covered with ornaments, and 10 inches on each side appear to bear traces of some inscriptions. This sill measures 10 by 7½ inches. The ornamental part contains beautifully interlacing foliage.

The villagers asserted that images, &c. are found wherever the spot is dug, and on digging out a little I found three large stones, two running at right angles and one horizontal, containing mutilated figures, some riding on a bull, a lion and a tiger, and two other hopelessly mutilated animal figures. Another slab was partially dug out, lying just in front of Buddha's image, bearing some marks which may be those of inscriptions. Hard by the image of Buddha, under the Pípal tree, is a choked up well, which is said to contain a good many images and also the severed limbs of these figures.

We were then led a few yards further out of this jungle to a Pípal tree with shrub-grown pile at its foot, under which the villagers asserted the image of *Sivji* was buried. I only discovered a slab lying there, but cannot say what could be discovered on removing the mound of earth.

Thence we drove to the adjacent village of Sirsea to see the fort of the *Cheroos*. Who these *Cheroos* were, the villagers could not tell; but on questioning the Manager of the Hutwa Ráj I learnt that they were the ancient (aboriginal?) inhabitants now extinct, and that relics of their time were also being found in some other parts of the Ráj. We found no sort of fortification at Sirsea but only a high level *charida* (pastural) ground, of about 25 or 30 bíchás, perforated with pits of porcupines. We found there a number of small wells, only 3 feet square, strongly built with small bricks none of which had given way. I saw one of these wells still used by the villagers to water their fields by means of a *Dhenkúl*, and I was informed of the existence of one more almost choked up, but they asserted there were 52 in former times.

The villagers then spoke of the existence of some *ghát* where the *Cheroo* Rája used to bathe; but as it was too dark I had to return without seeing it.

2. *On the Dinájpur Copper Plate Inscription of Mahápála*,—By PROF. F. KIELHORN, C. I. E., Göttingen. Communicated by the PHILOLOGICAL SECRETARY.

3. *First Instalment of the Bower Manuscript, transcript, translation and notes*,—By. DR. A. F. R. HOERNLE.

The papers will be published in the Journal, Part I.

4. *On a Botanical visit to Little Andaman and the Nicobars*.—By D. PRAIN.

While awaiting the arrival of the "*Investigator*" at Port Blair in November 1890, the writer was invited by Col. Cadell, v. c., Chief Commissioner of the Andamans, to visit, in connection with the Botanical Survey of India, the islands of Narcondam and Barren Island, two places



rarely visited and not previously botanically explored. Having obtained the permission of Dr. G. King, F. R. S., the writer was enabled to make this visit in the "*Nancowry*" during March and April 1891. After visiting Narcondam the steamer was required at Port Blair in order to proceed to Little Andaman and Car Nicobar, and Col. Cadell not only permitted the writer to accompany the vessel there, but also, at the suggestion of Mr E. H. Man, kindly directed her to proceed to Batti Malv, a small island without inhabitants and very difficult of access, lying 18 miles south of Car Nicobar. After returning from Batti Malv the steamer took the writer to Barren Island.

The botanical results of the visits to Narcondam and Barren Island, which together formed the central feature of the tour, and the botanical exploration of which was the writer's main purpose, will, it is hoped, soon be made public. The results of the visits to the islands of Little Andaman, Car Nicobar and Batti Malv have been dealt with separately and are now laid before the Society. They have been treated in this fashion, partly because these visits formed an episode in the tour apart from its main object, but chiefly because the lists are less exhaustive, owing to the short time available for collection in each place, than the corresponding lists for Barren Island and Narcondam will be.

The details of the visits are as follows:—the "*Nancowry*" left Port Blair on the morning of Good-Friday, reaching Bomliya Creek, where two natives of Little Andaman, who had been visiting Port Blair, were to be landed, about 2 P. M. As the state of the tidal currents made it inadmissible to leave again till 5-30, the writer had an opportunity of spending three hours in collecting at the mouth of the creek and for a mile or two along the north coast of the island to the east of this. The jungle behind the beach forest was too dense and the time available too short to admit of his penetrating any distance into the interior.

The island of Little Andaman, as seen from the sea, presents a somewhat different appearance from Great Andaman. Instead of being diversified by ridges and valleys and isolated hills, it has a long, low uniform rounded outline similar to that of Sentinel Island as seen from the top of Mount Harriet near Port Blair, and to that of Car Nicobar. It appears, however, to be uniformly covered with forest and to have none of the bare grass-heaths that characterise Car Nicobar. The creek at which the writer landed is the principal one on the north coast of the island. It derives its name from an Andamanese word meaning "flies," and certainly these insects abound there in great numbers and are very troublesome. There is nothing in the mangrove-swamp vegetation to distinguish this from similar places in the Andamans and very little in the beach-forest to characterise the island except that *Casu-*



*arina equisetifolia* is here very plentiful immediately behind the beach. This species, the writer was informed at Port Blair, is equally plentiful in the whole circuit of the coast, so much so that the Andamanese name for the island is Wirra-Marú, *Anglicé* "Casuarina-sand." In Great Andaman this tree, as an indigenous species, is confined to a single bay on the west side of North Island. As in Great Andaman there are no Coco-nut trees on the coast. On the reefs the chief distinctive features are the presence of beds of *Halophila ovalis* and considerable quantities of *Halimeda discoidea*. The visit took place between half-tide and full-tide and no exposed rocks were seen in the vicinity at the time.

Leaving about 6 P. M. the "*Nancowry*" steamed to Car Nicobar to land some men belonging to Kimiós village, who had been in prison at Port Blair. Sáwi Bay was reached on Saturday morning and two men of Moos village, with their canoe, were taken on board to assist in landing on Batti Malv. Owing to the heavy surf running it was found that landing in Kimiós Bay would be very difficult; the vessel therefore, about 2 P. M., anchored off another village 5 miles to the north and the writer was able to land, and walk to Kimiós and back, along two jungle paths, collecting by the way and getting on board again at dusk. Owing to the short time available attention could only be directed to the sea-fence, the beach-forest, the under-growth of the Coco-nut zone, and the mere outskirts of the interior jungle. Car Nicobar is so well-known that no particular notice of its appearance is necessary. There is the usual fringing-reef with a sandy beach, behind this the sea-fence, and within that a zone of beach-forest, of which the area under Coco-nut trees forms an integral portion. The indigenous species are very much like those of the Andamans in similar places—the great distinguishing feature being, of course, the wide Coco-nut zone. The Coco-nuts themselves are particularly fine, and though at Port Blair the finest sorts of Nicobarese and Ceylonese Coco-nuts are carefully cultivated they do not equal those of Car Nicobar either in flavour or size. Yet those of Car Nicobar are said to be by no means the best that the Nicobars can produce. The true interior forest and the grass heaths the writer had no opportunity of examining.

In the night the "*Nancowry*" proceeded to Batti Malv, which was reached at dawn on Easter-day, and the writer, going on shore at once, spent the greater part of the day there, collecting. Landing, even with the assistance of the Nicobarese and their canoe, was effected with considerable difficulty at the north-west corner of the island, where alone it is said to be possible to go on shore. At this point the shore is precipitous, sinking into deep water without any coral fringing-reef and rising into a jagged wall broken somewhat by gullies and small caverns, nearly

everywhere overhanging, and occasionally with tunnelled projecting points. This wall is here on an average from 10-15 feet above high-water-mark. There was no time to circumnavigate the island, but the coast is said to present similar features in its whole circuit, the cliff being highest at the south-west corner of the island and being there about 50 feet high.

The difficulty of landing is largely due to this feature of overhanging cliff and is much increased by the strength of the tidal currents which, even in calm weather, cause a heavy swell to surge into the caverns and along the cliff-face. On reaching the edge of the cliff we find, at this part of the coast, a rocky platform over which the waves evidently wash in the monsoon. The rock is a limestone, and is, by weathering and wave-action, worn into the most fantastic spikes and pinnacles and ridges,\* the sharp edges of which make walking extremely difficult. This platform slopes backwards rather rapidly to a height of about 10 feet more when the jungle commences with the ordinary sea-fence of *Pandanus*, etc.; the platform itself is almost destitute of vegetation, the only species present in it being tufts of *Oldenlandia corymbosa*, *Boerhaavia repens* and *Fimbristylis diphylla*. Within the sea-fence the surface of the island is even and almost flat from side to side of the island.†

The commonest tall tree is *Mimusops littoralis*, which is not here confined to the coast-zone, but extends from side to side of the island. The jungle is less dense than Andamans and Nicobar forests usually are. There is a wonderful absence of climbing species, especially of the class of armed climbers, and there is a remarkably large number of species with edible fruits, a feature that doubtless owes its existence

\* This fantastically-weathered limestone so much resembles the bottom of a coral-pool that the rock has actually been described as a raised coral-reef. (See Hume: *The Islands of the Bay of Bengal*, in *Stray Feathers*, vol. ii, p. 95).

† The Admiralty maps give the island a "landmark-height" of 130 feet which is doubtless correct, and in some maps it will be seen that a hill is indicated in the centre of the island; this, however, is quite incorrect. The height at the north-east corner is, as has been said in the text, about 30 feet; at the south-west corner the height is said to be about 60 feet; assuming that the whole island has an even surface the middle of the island cannot exceed 45 feet. Here, as in all other islands exposed to strong monsoons, the trees immediately on the coast are stunted and dwarfed, becoming progressively taller as we pass inland. The principal tree is *Mimusops littoralis*, and even near the shore this often reaches a height of 60 feet, while trees a few hundred yards inland reach 80 feet; this is the common height of the tree and one which it rarely exceeds. The height obtained by angular measurement from the sea thus not only does not require us to suppose that there is a hill in the middle, but shows that there cannot be anything of the sort and the newer maps correctly indicate that the island has a flat surface.

to the fact that the island, being so remote and so inaccessible, is largely frequented by fruit-eating pigeons and is one, (it has been even said, is the only), known locality in which the large Nicobars pigeon (*Caloenas nicobarica*) breeds. Fruit-eating bats too are abundant in the island and are perhaps partly responsible for the introduction of some of these species. Among the more interesting species of this kind is the *Datura*, which in most localities is considered, and probably correctly considered, a species introduced by man but which here undoubtedly must be a bird-introduced plant. Not only is it an exceedingly rare thing for the Nicobarese to visit the island, *Datura* is not a plant with which they are acquainted. The writer, who collected all the possibly introduced species to be found in the neighbourhood of the two villages on Car Nicobar visited by him did not find it present. Moreover it was apparently not found either by Mr. Jelinek during the visit of the frigate "*Novara*" or by Mr. Kurz during his visit to the Nicobars, and no *Solanaceæ* are enumerated in Mr. Kurz's list of Nicobars plants in the *Society's Journal*, vol. xlv, part 2, p. 115 *et seq.* Though uninhabited and apparently very rarely visited there are some Coco-nut trees; the nuts are, however, small and their flavour is rather poor. The few trees that occur are just within the *Pandanus* fence, and there is nothing like a Coco-nut zone. There is no water on the island; still, besides the bats, there occur, of mammalia, both rats and pigs; the traces of the latter were very common and one pig's skull was found in the jungle. The great feature of the island, however, is the enormous multitude of Nicobar pigeons. These swarm everywhere, in the trees and on the ground, and remind one by their numbers of an English "rookery."\* No snakes were seen, but the number and variety of the lizards was very remarkable.

One of the most striking features of the island was the freshness and greenness of the foliage, even in March; a circumstance that, considering the nature of the soil, must be altogether explained by the remarkably heavy dews that are deposited in these latitudes. Landing as the writer did, at day-break, he found the leaves quite as heavily laden with water as they could possibly have been after a thunder-shower, and on the side of the island away from the sun the dews had not yet become completely dissipated at 10 A. M.

After spending eight hours on shore the writer, himself, but not the island, exhausted, had reluctantly to return to the "*Nancowry*" which at once steamed off to Andamans, reaching Port Blair on Monday at noon.

\* For an interesting account of the appearance of the island see Mr. Hume's paper already referred to; *Stray Feathers*, vol. ii, pp. 94—97.



In the two subjoined lists the plants obtained during this short tour are enumerated. The first list gives, for the sake of convenience, those collected in Little Andaman. Species for which their occurrence here is the first indication of their presence in the Andaman group are distinguished by an asterisk.

The second list gives the plants obtained in Car Nicobar and in Batti Malv. Those for which this is the first record of their occurrence in the Nicobars and which are not given in the *Enumeration of the plants of the Nicobar Islands* by Mr. Kurz (*Journ. As. Soc. Beng.*, xlv, pt. 2, p. 115—164) are similarly distinguished.

# I. LIST OF PLANTS COLLECTED AT BOMLIYA CREEK, NORTH END OF LITTLE ANDAMAN.

## GUTTIFERÆ.

*CALOPHYLLUM INOPHYLLUM* Linn.

## MALVACEÆ.

*HIBISCUS TILIACEUS* Linn.

*THESPESIA POPULNEA* Linn.

## STERCULIACEÆ.

*STERCULIA RUBIGINOSA* Vent., *var. GLABRESCENS* King. (*Sterculia mollis* Kurz in *Jour. As. Soc. Beng.*, xlv, pt. 2, 120 not of Wallich.)

## MELIACEÆ.

### 5. *CARAPA OBOVATA* Blume.

Having seen both *C. obovata* Bl., and *C. malaccensis* Lamk. *in situ* and examined them as they grow, it is very difficult for the writer to give his assent to the proposition that treats the two as conspecific. *C. moluccensis* is common on rocky coasts, while *C. obovata* is confined to muddy flats, in which it is common, and to mangrove-swamps, of the vegetation of which it forms an integral portion. There is no difficulty with the large suites of specimens that are preserved in the Calcutta Herbarium in distinguishing the one plant from the other, and the residents of Port Blair who know both find it impossible to understand why botanists should wish to believe them to be the same. It may be that their differences, so palpable to the untrained eye, are altogether due to the environment of the two being so different; this, however, if it be a fact, can only be demonstrated by experiment and the *onus probandi*



obviously rests with those who would unite, not with those who can distinguish, the trees; till the point is settled the writer feels compelled to follow Blume in treating them as distinct. In the Andamans *Carapa moluccensis* flowers in November and December, *C. obovata* flowers in March and April.

### LEGUMINOSÆ.

DESMODIUM UMBELLATUM DC.

ABRUS PRECATORIUS Linn.

ERYTHRINA INDICA Lamk.

CANAVALIA TURGIDA Grah. in Wall. Cat.

This is the common sea-shore *Canavalia* of the Andaman, Nicobar and Malayan coasts and is undoubtedly the plant intended by Graham as *C. turgida* Wall. Cat. n. 5534 A, a plant collected by Wallich in Penang. Cat. n. 5534 B, from Siam (*Herb. Finlayson*), is not represented at Calcutta but most probably is, since Graham and Wallich thought so, the same plant. *C. turgida* is certainly not identical with *C. ensiformis*, even if we admit that the *Canavalia gladiata*, cultivated in the Eastern Hemisphere, is conspecific with the American cultivated plant; nor is it the same as *C. virosa* W. & A., with which Mr. Kurz has identified it (*Journ. As. Soc. Beng.* xlv, pt. 2, p. 127) and which the writer agrees with Mr. Baker in considering the wild form of *Canavalia ensiformis* (*C. gladiata*). The interior of the pod, even more than the different shape, makes the proposal to treat *C. turgida* and *C. virosa* as conspecific quite impossible. Perhaps the confusion of *C. turgida* with *C. virosa* may have arisen from the fact that Wall. Cat. 5534 C, from Ava, is true *C. virosa*. A reference, however, to the Lithographed Catalogue itself shews that Dr. Wallich only doubtfully refers the Ava plant to Graham's species. Mr. Baker doubtfully refers *C. Stocksii* Dalz. & Gibs., Bomb. Fl. 69, to *C. turgida*; this is, in the writer's opinion, highly improbable because 1., *C. turgida* seems always strictly confined to sea-shores and to the banks of muddy estuaries and never has been collected inland; and 2, though it extends from the Salt-lakes near Calcutta and from the Sunderbuns at the top of the Bay of Bengal to the Indo-Chinese and Malayan Coasts generally, it has not yet been found anywhere on the coasts of India proper, of Ceylon, or of the Laccadives.

Though a characteristic sea-shore species, *C. turgida* is not conspecific with the *C. obtusifolia* of the coasts of India proper, which apparently does not occur in the Andamans, the Nicobars, or the Malay Peninsula—on the shores of the Andaman sea, though it does occur in Java (as pointed out by Prof. Miquel) to which island *C. turgida* also extends.

The writer has not seen fruiting specimens of a Japanese sea-coast species identified by Mr. Maximowicz and others with *C. obtusifolia* DC. (*C. lineata* DC.; *Dolichos lineatus* Thunbg.) but from a flowering specimen in Herb. Calcutta, it is apparently not specifically identical with the Indian *C. obtusifolia* figured by Dr. Cleghorn (*Madr. Lit. Soc. Journ.*, n. s., i, t. 4). On the other hand there is no apparent difference in flowers, leaves or habit, between the Japanese *Dolichos lineatus* and the Indo-Chinese and Malayan *Canavalia turgida*. If the fruits are also found to agree, and if *Dolichos lineatus* is the true *Canavalia obtusifolia*, *C. turgida* will have to be reduced to *C. obtusifolia*. If the fruits differ *C. turgida* undoubtedly deserves the specific rank assigned to it by Graham, Wallich and Miquel. The name "*C. obtusifolia*," it may be remarked, is as appropriate to the Indian seashore plant, as it is unsuitable to the Japanese littoral *C. lineata* and to the Indo-Chinese and Malayan littoral *C. turgida*.

## 10. VIGNA LUTEA A. Gray.

MUCUNA GIGANTEA DC.

DERRIS SCANDENS Benth.

DERRIS ULIGINOSA Benth.

PONGAMIA GLABRA Vent.

## 15. CÆSALPINIA BONDUCELLA Flem.

CYNOMETRA RAMIFLORA Linn.

## RHIZOPHOREÆ.

CERIOPS CANDOLLEANA Arn.

BRUGUIERA GYMNORHIZA Lamk.

## COMBRETACEÆ.

TERMINALIA CATAPPA Linn.

## MYRTACEÆ.

## 20. BARRINGTONIA SPECIOSA Forst.

## RUBIACEÆ.

HYDNOPHYTUM ANDAMANENSE Becc., Malesia ii, 156, t. 48, fig. 8—13.

WEBERA KURZII Hook. f.

GUETTARDA SPECIOSA Linn. f.

IXORA BRUNNESCENS Kurz.

Add to previous descriptions:—Flowers white, sweet smelling, corolla tube  $\frac{1}{3}$  in. long, teeth  $\frac{1}{8}$  in. long; berries creamy white with purple meridional elongated blotches.

25. MORINDA CITRIFOLIA Linn., var. BRACTEATA Hook. f. (*M. bracteata* Roxb.

## COMPOSITÆ.

WEDELIA SCANDENS C. B. Clarke.

## MYRSINÆ.

ARDISIA HUMILIS Vahl. (*A. littoralis* Andr.).

## SAPOTACEÆ.

MIMUSOPS LITTORALIS Kurz.

Common here, as elsewhere in the Andamans and Nicobars, in the beach forest. Three or four lofty trees recently blown down yielded from among their topmost branches, the species *n.* 30, *n.* 31, *n.* 43, *n.* 44, *n.* 45, *n.* 46, *n.* 47, *n.* 53, *n.* 54, and *n.* 55 of this list.

## APOCYNÆ.

OCHROSIA BORBONICA Gmel.

This species is much more frequent in the Andamans than *Cerbera Odollam*, and the fruits, especially when the outer skin is removed and only the stringy endocarp is seen, are not distinguishable from those of the latter species.

## ASCLEPIADACEÆ.

30. DISCHIDIA NUMMULARIA R. Br.

\* DISCHIDIA RAFFLESIANA Wall.

Not previously recorded from the Andamans. The ants present here in the ascidial leaves were not 'harmless' as Dr. Wallich found those at Singapur to be.

## BORAGINÆ.

CORDIA SUBCORDATA Lamk.

Very common.

TOURNEFORTIA ARGENTEA Linn.

## CONVOLVULACEÆ.

IPOMÆA DENTICULATA Choisy.

35. IPOMÆA BILOBA Forst.

## VERBENACEÆ.

PREMNA INTEGRIFOLIA Linn.

CLERODENDRON INERME Gærtn.

## LAURINÆ.

HERNANDIA PELTATA Linn.

Very common.

## SANTALACEÆ.

CHAMPEREIA GRIFFITHIANA Baill.

A very common tree in the coast-zone, 30—50 feet high.

## CASUARINEÆ.

## 40. CASUARINA EQUISETIFOLIA Forst.

One of the commonest trees in the coast-zone just within the *Pandanus* sea-fence. In Great Andaman this species only occurs in one spot, Casuarina Bay, on the west coast of North Andaman.

## CYCADACEÆ.

CYCAS RUMPHII Miq.

## HYDROCHARIDÆ.

## \* HALOPHILA OVALIS R. Br.

Very common; this has not previously been met with on Andaman reefs.

## ORCHIDACEÆ.

## \* DENDROBIUM SECUNDUM Lindl.

This occurs in South Andaman and in the Coco group also.

DENDROBIUM TENUICAULE Hook. f.

Also common at Port Blair in South Andaman.

## 45. DENDROBIUM ANCEPS Roxb.

## \* DENDROBIUM TERMINALE Par. &amp; Reichb. f.

This is also common, along with the preceding, at Port Blair in South Andaman.

AERIDES MULTIFLORUM Roxb.

## AMARYLLIDACEÆ.

CRINUM ASIATICUM Linn.

## LILIACEÆ.

DRACENA ANGUSTIFOLIA Roxb.

## FLAGELLARIEÆ.

## 50. FLAGELLARIA INDICA Linn.

## PANDANACEÆ.

PANDANUS ODORATISSIMUS Linn. f.

## NAIADACEÆ.

CYMODOCEA CILIATA Ehrenb.



## FILICES.

DAVALLIA SOLIDA Sw.

POLYPODIUM QUERCIFOLIUM Linn.

55. POLYPODIUM ADNASCENS Sw.

ACROSTICHUM SCANDENS J. Sm.

## ALGÆ.

SARGASSUM ILICIFOLIUM Agardh.

TURBINARIA ORNATA Lamk.

HALIMEDA OPUNTIA Lamk.

60.\* HALIMEDA DISCOIDEA Dcne.

PADINA PAVONIA Gaill.

## II. LIST OF THE PLANTS COLLECTED IN CAR NICOBAR AND BATTI MALV.

## ANONACEÆ.

POPOWIA PARVIFOLIA Kurz.

Car Nicobar ; Batti Malv.

## MENISPERMACEÆ.

CYCLEA PELTATA H. f. &amp; T.

Batti Malv.

## CAPPARIDEÆ.

GYNANDROPSIS PENTAPHYLLA DC.

Car Nicobar ; a weed round the huts of natives at Kimiós.

\* CAPPARIS AMBIGUA Kurz.

Batti Malv ; a common unarmed climber ; previously only known from the Andaman group.

## GUTTIFERÆ.

5. CALOPHYLLUM INOPHYLLUM Linn.

Car Nicobar and Batti Malv.

## MALVACEÆ.

SIDA ACUTA Burm.

Car Nicobar ; a weed near Kimiós village.

URENA LOBATA Linn.

Car Nicobar ; a weed near villages.

HIBISCUS TILIACEUS Linn.

Car Nicobar and Batti Malv.

THESPESIA POPULNEA Linn.

Car Nicobar and Batti Malv.

## STERCULIACÆ.

10. *STERCULIA RUBIGINOSA* Vent., var. *GLABRESCENS* King. (*S. mollis* Kurz, not of Wallich.)

Car Nicobar and Batti Malv.

*MELOCHIA VELUTINA* Bedd.

Car Nicobar.

## RUTACEÆ.

*GLYCOSMIS PENTAPHYLLA* Corr.

Car Nicobar.

*TRIPHASIA TRIFOLIOLATA* DC.

Car Nicobar.

## AMPELIDEÆ.

*VITIS PEDATA* Vahl.

Batti Malv.

15. *LEEA SAMBUCINA* Willd.

Car Nicobar.

*LEEA GRANDIFOLIA* Kurz.

Batti Malv, very common.

## SAPINDACEÆ.

*LEPIDOPETALUM JACKIANUM* Radlk. (*Cupania Jackiana* Hiern.)

Car Nicobar, flowering specimens; Batti Malv; fruiting specimens.

There is now no doubt that this species is correctly referred to *Lepidopetalum* by Prof. Radlkofer. The flower-buds are oval, pointed; the 4 green, lanceolate calyx-segments alternate with 4 extremely small, white cordate-acute petals attached to the face of each of which is a single large scale, connate by its margins with the edges of the corresponding petal and forming along with it a small, peltate-infundibuliform pouch; the stamens are 8 in number with glabrous, slender, short filaments and oblong, pilose anthers; the ovary is 2-celled; the fruit, reddish-brown externally, is bright scarlet within, usually the seed of one of the two cells is abortive; the ripe seeds are black, covered with a mucilaginous substance and embraced, as to their lower third, in a pink, cup-shaped, thick, fleshy arillus. It is one of the favourite fruits with *Calenas nicobarica* and the other frugivorous pigeons. Even if, with Bentham and Hooker, (*Gen. Plantar.* i, 399), generic rank is not accorded to *Lepidopetalum*, Hiern's location of the species in *Cupania* (*Flor. Brit. Ind.* i, 678) is not valid, since, as these authors show, *Lepidopetalum* is more nearly related to *Batonia*, as understood by them, than to *Cupania*.

ALLOPHYLUS COBBE Blume.

Batti Malv; the specimens agree exactly with authentic specimens of *A. littoralis* Blume.

ERIOGLOSSUM EDULE Blume.

Batti Malv.

#### ANACARDIACEÆ.

20. SEMECARPUS HETEROPHYLLA Blume.

Batti Malv.

#### CONNARACEÆ.

\* CONNARUS sp.

Batti Malv; the specimens are in leaf only, but agree well with specimens of an undescribed *Connarus* from the Nicobars about to be published by Dr. G. King in the *Annals of the Roy. Bot. Garden, Calcutta*.

#### LEGUMINOSÆ.

DESMODIUM UMBELLATUM DC.

Batti Malv.

ABRUS PRECATORIUS Linn.

Car Nicobar and Batti Malv.

ERYTHRINA INDICA Lamk.

Car Nicobar.

25. CANAVALIA TURGIDA Grah.

Batti Malv.

DERRIS SCANDENS Bth.

Batti Malv.

DERRIS ULIGINOSA Bth.

Batti Malv.

SOPHORA TOMENTOSA Linn.

Car Nicobar.

CÆSALPINIA BONDUCELLA Flem. (*C. Bonduc* Kurz, *not of* Linn.)

Batti Malv.

30. CASSIA OCCIDENTALIS Linn.

Car Nicobar, a weed near Kimiós village.

#### COMBRETACEÆ.

TERMINALIA CATAPPA Lamk.

Car Nicobar, Batti Malv.

GYROCARPUS JACQUINII Roxb.

Batti Malv.

## MYRTACEÆ.

BARRINGTONIA SPECIOSA Forst.

Batti Malv.

## MELASTOMACEÆ.

MEMECYLON EDULE Roxb. *var.* ?—.

Batti Malv.

## CUCURBITACEÆ.

35. \* TRICHOSANTHES PALMATA Roxb.

Car Nicobar, Batti Malv.

\* MUKIA SCABRELLA Arn.

Batti Malv.

## CORNACEÆ.

ALANGIUM SUNDANUM Miq.

Batti Malv, a very common large climber.

## RUBIACEÆ.

\* OLDENLANDIA CORYMBOSA Linn., *var.*—.

Batti Malv, on the bare limestone rocks between the sea and the *Pandanus* fence. The specimens are exactly like those of *Hedyotis alsinæfolia* R. Br. in Wall. Cat. n. 873.

WEBERA KURZII Hook. f.

Car Nicobar.

40. OPHIORHIZA MUNGOS Linn.

Car Nicobar.

GUETTARDA SPECIOSA Linn.

Batti Malv.

IXORA BRUNNESCENS Kurz.

Car Nicobar, Batti Malv.

IXORA CUNEIFOLIA Roxb.

Car Nicobar.

IXORA CUNEIFOLIA Roxb., *var.* MACROCARPA Kurz.

Batti Malv.

45. MORINDA CITRIFOLIA Linn.,
- var.*
- BRACTEATA Hook. f. (
- M. bracteata*
- Roxb.)

Car Nicobar, Batti Malv.

MUSSÆNDA MACROPHYLLA Wall.

Car Nicobar.

PÆDERIA FETIDA Linn.

Batti Malv.



## COMPOSITÆ.

WEDELIA SCANDENS C.B. Clarke.

Car Nicobar, Batti Malv.

## GOODENOVIEÆ.

SCÆVOLA KÖENIGII Vahl.

Batti Malv.

## MYRSINÆÆ.

50. ARDISIA HUMILIS Vahl. (
- A. littoralis*
- Andr.)

Car Nicobar, Batti Malv.

## SAPOTACEÆ.

MIMUSOPS LITTORALIS Kurz.

Car Nicobar, Batti Malv.

## EBENACEÆ.

DIOSPYROS KURZII Heirn.

Batti Malv.

## APOCYNÆÆ.

OCHROSIA BORBONICA Gmel.

Car Nicobar.

TABERNÆMONTANA CRISPA Roxb.

Car Nicobar, Batti Malv.

55. PARSONSIA SPIRALIS R. Br.

Car Nicobar.

## ASCLEPIADACEÆ.

DISCHIDIA GRIFFITHII Hook. f. ? (*D. bengalensis* Kurz, not of Colebr.)

Car Nicobar. There are no authentic examples of *D. Griffithii* at Calcutta, with which to compare the plant obtained by the writer in Car Nicobar, and by Mr. Jelinek in Kamorta and Katschall. There are specimens of Novara n. 115 at Calcutta, and an examination of these shows that they are precisely the same as the present Car Nicobar plant and that they have been erroneously referred by Mr. Kurz to *D. bengalensis*. The Nicobars plant has a hirsute corolla throat, the corolla-throat in *D. bengalensis* is glabrous.

## LOGANIACEÆ.

STRYCHNOS ACUMINATA Wall.

Batti Malv.

## BORAGINÆÆ.

CORDIA SUBCORDATA Lamk.

Batti Malv.

TOURNEFORTIA ARGENTEA Linn.

Car Nicobar.

## CONVOLVULACEÆ.

60. IPOMÆA DENTICULATA Choisy.

Car Nicobar, Batti Malv.

IPOMÆA CYMOSA Roem. & Schult.

Car Nicobar.

IPOMÆA BILOBA Forsk.

Car Nicobar, Batti Malv.

CONVOLVULUS PARVIFLORUS Vahl.

Batti Malv.

## SOLANACEÆ.

\* SOLANUM MELONGENA Linn.

Car Nicobar; near huts of natives at Kimiós.

65. \* DATURA FASTUOSA Linn.

Batti Malv; interesting as an addition to the Nicobar Flora and as proving from its presence in this island that human agency is not always necessary to account for the dispersal of the species.

## ACANTHACEÆ.

ERANTHEMUM CINNABARINUM Nees, *var. SUCCISIFOLIUM* Clarke. (*E succifolium* Kurz).

Car Nicobar, Batti Malv.

PERISTROPHE ACUMINATA Nees.

Car Nicobar.

## VERBENACEÆ.

PREMNA INTEGRIFOLIA Linn.

Batti Malv.

CLERODENDRON INERME Gaertn.

Car Nicobar, Batti Malv.

70. CLERODENDRON PANICULATUM Linn.

Car Nicobar.

CALLICARPA LONGIFOLIA Lamk.

Car Nicobar.

## LABIATÆ.

\* OCIMUM BASILICUM Linn.

Car Nicobar; a weed near Kimiós village.

The dispersal of the species of this genus—the *Tulsi* plants—is somewhat curious. In Kamorta, Katschall and Nancowry, where Hindu convicts have been stationed, it is the true or sacred *Tulsi* [*O. sanctum*] that has become naturalised. Here, where no Hindus have lived, it is *O. Basilicum* that is grown by the natives, to whom one *Tulsi* is as good as another. In the Laccadives, where the people are Mussalmans, and to whom the sacred *Tulsi* does not specially appeal, it is the *Ram Tulsi* (*O. gratissimum*) that occurs.

## NYCTAGINEÆ.

BOERHAAVIA REPENS Linn.

Batti Malv, on the rocks outside the *Pandanus* sea-fence.

\* PISONIA ACULEATA Linn.

Batti Malv.

75. \* PISONIA ALBA Spanoghe.

Batti Malv.

\* PISONIA EXCELSA Blume.

Batti Malv.

## AMARANTACEÆ.

\* AMARANTUS SPINOSUS Linn.

Car Nicobar, near Kimiós village.

\* ACHYRANTHES ASPERA Linn.

Car Nicobar, a weed near Kimiós village. Only the sea-shore variety, (*A. porphyristachya* Wall.), has hitherto been known to occur in the Nicobars; this was obtained by Mr. Jelinek of the "*Novara*."

ÆRUA LANATA JUSS.

Car Nicobar, Batti Malv.

## LAURINEÆ.

80. HERNANDIA PELTATA Linn.

Car Nicobar.

## ARISTOLOCHIACEÆ.

\* ARISTOLOCHIA TAGALA Cham. & Schlecht.

Batti Malv.

## EUPHORBIACEÆ.

EUPHORBIA ATOTO Linn.

Car Nicobar.

GLOCHIDION CALOCARPUM Kurz.

Car Nicobar.

FLUEGGEA MICROCARPA Blume.

Car Nicobar, Batti Malv.

85. BREYNIA OBLONGIFOLIA Muell.-Arg.

Car Nicobar.

BRIDELIA TOMENTOSA Blume.

Car Nicobar.

ALCHORNEA RUGOSA Muell.-Arg.

Car Nicobar. The specimens agree exactly with authentic examples of *A. javensis* Muell.-Arg.

CLAOXYLON LONGIFOLIUM Muell.-Arg.

Car Nicobar.

CLAOXYLON MOLLE Endl.

Batti Malv.

90. \* GELONIUM ? sp.

Batti Malv. The specimens are without fruit and perhaps do not belong to this genus. They differ from anything hitherto reported from the Nicobars.

#### URTICACEÆ.

PIPTURUS VELUTINUS Wedd.

Car Nicobar.

FIGUS HISPIDA Linn., *var.* DEMONUM Kœnig.

Car Nicobar, Batti Malv.

FIGUS RUMPHII Vahl.

Batti Malv.

#### CYCADACEÆ.

CYCAS RUMPHII Miq.

Car Nicobar, Batti Malv.

#### PALMEÆ.

95. COCOS NUCIFERA Linn.

Car Nicobar, Batti Malv.

ARECA CATECHU Linn.

Car Nicobar.

#### PANDANACEÆ.

PANDANUS ODORATISSIMUS Linn. f.

Car Nicobar, Batti Malv.



## LILIACEÆ.

DRACÆNA ANGUSTIFOLIA Roxb.

Car Nicobar, Batti Malv.

## AMARAYLLIDACEÆ.

CRINUM ASIATICUM Linn.

Batti Malv.

## FLAGELLARIEÆ.

100. FLAGELLARIA INDICA Linn.

Batti Malv.

## ORCHIDACEÆ.

SARCANTHUS ? sp.

Batti Malv. The specimen is in fruit only.

EULOPHIA DECIPIENS Kurz.

Car Nicobar.

## NAIADACEÆ.

CYMODOCEA CILIATA Ehrenb.

Car Nicobar.

## CYPERACEÆ.

CYPERUS PENNATUS Lamk.

Batti Malv.

105. FIMBRISTYLIS DIPHYLLA Vahl.

Batti Malv, on rocks between the sea and the *Pandanus* belt.

## GRAMINEÆ.

PANICUM FILIPES Nees.

Car Nicobar.

ISCHÆMUM MUTICUM Retz.

Car Nicobar, Batti Malv.

ERAGROTIS PLUMOSA Linn.

Car Nicobar.

## FILICES.

POLYPODIUM QUERCIFOLIUM Linn.

Car Nicobar, Batti Malv.

110. POLYPODIUM ADNASCENS Swartz.

Car Nicobar, Batti Malv.

POLYPODIUM PHYMATODES Linn.

Car Nicobar.

LYGODIUM FLEXUOSUM Swartz.

Car Nicobar.

### ALGÆ.

SARGASSUM ILICIFOLIUM Agardh was the only seaweed seen on Batti Malv. About a dozen seaweeds were obtained on Car Nicobar; they have have not yet been determined.

5. *Notes on some native Ephemeridae in the Indian Museum*,—By REV. A. E. EATON, M. A. Communicated by the SUPERINTENDENT, INDIAN MUSEUM.

6. *Catalogue of the Diptera of the Oriental Region*, Part III,—By MONS. J. M. F. BIGOT. Communicated by the SUPERINTENDENT, INDIAN MUSEUM.

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# INDEX

TO THE  
PROCEEDINGS, ASIATIC SOCIETY OF BENGAL  
FOR 1891.

|                                                                                     | Page       |
|-------------------------------------------------------------------------------------|------------|
| Abdul Latif, (Nawáb Bahádur), elected Member of Library Committee ...               | 46         |
| „ „ elected Member of Philological Committee ...                                    | <i>ib.</i> |
| Adie, (Dr. J. R.), elected Member of Physical Science Committee                     | 47         |
| Akola, find of old coins in ...                                                     | 82         |
| Alcock, (Dr. A. W.), elected Member of Natural History Committee ...                | 47         |
| „ „ elected Member of Physical Science Committee ...                                | <i>ib.</i> |
| Andaman and the Nicobars, botanical visit to Little ...                             | 156        |
| Annual Meeting ...                                                                  | 13         |
| „ Report ...                                                                        | <i>ib.</i> |
| „ Address of President ...                                                          | 36         |
| Antiquities of Belwa-Sirsea ...                                                     | 154        |
| Amir Ali, (Hon. Justice), elected Member of History and Archæological Committee ... | 47         |
| Apjohn, (J. H.), withdrawal of ...                                                  | 38         |
| Baillie, (D. C.), elected an Ordinary Member ...                                    | 45         |
| Baker, (E. C. S.), elected an Ordinary Member ...                                   | 53         |
| Barclay, (Dr. A.), elected Member of Natural History Committee                      | 47         |
| „ „ additional <i>Uredineæ</i> from the neighbourhood of Simla ...                  | 102        |
| „ „ death of ...                                                                    | 130        |
| Barren Island, present condition of ...                                             | 84         |
| Baumgarten, (C. W.), death of ...                                                   | 93         |
| Beames, (J.), elected Member of Philological Committee ...                          | 46         |
| „ „ elected Member of History and Archæological Committee ...                       | 47         |
| Belwa-Sirsea, antiquities of ...                                                    | 154        |





|                                                                                         | <i>Page</i> |
|-----------------------------------------------------------------------------------------|-------------|
| Coins, eight Gupta, exhibition of ... ..                                                | 117         |
| Committees, election of ... ..                                                          | 46          |
| Copper Plate Inscription, Dinâjpur, of Mahîpâla ... ..                                  | 156         |
| „ Plates of king Kulastambha Deva... ..                                                 | 38          |
| „ „ of king Narsinha Deva ... ..                                                        | <i>ib.</i>  |
| Cotes, (E. C.), elected Member of Council... ..                                         | 37          |
| „ „ elected Member of Natural History Committee ... ..                                  | 47          |
| „ „ exhibited two insects ... ..                                                        | 94          |
| Council, abstract of Proceedings of, for 1890 ... ..                                    | 29          |
| „ members of ... ..                                                                     | 37          |
| Cowree piece, description of a two ... ..                                               | 5           |
| Croft, (Hon. Sir A. W.), elected President ... ..                                       | 37          |
| Crombie, (Dr. A.), elected Member of Council ... ..                                     | <i>ib.</i>  |
| Cunningham, (Dr. D. D.), elected Member of Council ... ..                               | <i>ib.</i>  |
| „ „ elected Member of Library Committee ... ..                                          | 46          |
| „ „ elected Member of Natural History Committee ... ..                                  | 47          |
| „ „ elected Member of Physical Science Committee ... ..                                 | <i>ib.</i>  |
| Dâs, (Sarat Chandra), exhibition of coins of Tibet ... ..                               | 48          |
| „ „ exhibited a drawing of the Paradise of the northern Buddhists ... ..                | 70          |
| „ „ note on the first tests of renunciation of the early Buddhists ... ..               | 102         |
| Death of Members... .. 54, 93, 101, 111,                                                | 130         |
| De-wa-chan ... ..                                                                       | 70          |
| Dinâjpur Copper Plate Inscription of Mahîpâla ... ..                                    | 156         |
| <i>Diptera</i> , catalogue of Oriental ... .. 48, 140,                                  | 175         |
| Doherty, (William), butterflies of Engerno ... ..                                       | 48          |
| „ „ butterflies of Sumba ... ..                                                         | <i>ib.</i>  |
| „ „ butterflies of Sumba and Sumbawa with some account of the Island of Sumba ... ..    | 84          |
| „ „ new and rare Indian <i>Lyccenidae</i> ... ..                                        | <i>ib.</i>  |
| Driver, (W. H. P.), elected Member of History and Archæological Committee ... ..        | 47          |
| Durbhanga, find of old coins in ... ..                                                  | 83          |
| Duthie, (J. F.), elected Member of Natural History Committee ... ..                     | 47          |
| Dutt, (Gerindranath), antiquities of Belwa-Sirsea ... ..                                | 154         |
| Eaton, (Rev. A. E.), notes on some Native <i>Ephemeridæ</i> in the Indian Museum ... .. | 175         |

|                                                                                       | Page |
|---------------------------------------------------------------------------------------|------|
| Electro-Chemical Reversals with thio-carbamides ...                                   | 66   |
| Eliot, (J), elected Member of Physical Science Committee ...                          | 47   |
| Elson, (S. R.), elected Member of Physical Science Committee ...                      | ib.  |
| Engerno, butterflies of ... ..                                                        | 48   |
| <i>Ephemeridæ</i> , notes on some Native, in the Indian Museum ...                    | 175  |
| Ernst, (Diego), elected an Ordinary Member ...                                        | 129  |
| Feistmantila, (Dr. Otakara), death of ... ..                                          | 54   |
| Fifth International Congress of Geologists, Washington ...                            | 82   |
| Finance, notice of ... ..                                                             | 15   |
| „ and visiting Committee, election of ...                                             | 46   |
| Flora of the Malayan Peninsula, No. 3 ... ..                                          | 75   |
| Führer, (Dr. A.), elected Member of Philological Committee ...                        | 46   |
| „ „ elected Member of Coins Committee ...                                             | 47   |
| „ „ elected Member of History and Archæological<br>Committee ... ..                   | ib.  |
| General Secretary, election of ... ..                                                 | 37   |
| Geologists, Fifth International Congress of, Washington ...                           | 82   |
| Ghiyâsu-d-dîn Balban, inscription of ... ..                                           | 2    |
| Ghosha, (Pratâpachandra), elected Member of Council ...                               | 37   |
| „ „ elected Member of Finance and Visiting<br>Committee ... ..                        | 46   |
| „ „ elected Member of Library Committee ...                                           | ib.  |
| „ „ elected Member of Philological Com-<br>mittee ... ..                              | ib.  |
| „ „ elected Member of History and Archæo-<br>logical Committee ... ..                 | 47   |
| Giles, (Dr. G. M.), elected Member of Natural History Committee ...                   | ib.  |
| „ „ elected Member of Physical Science Committee ...                                  | ib.  |
| <i>Glyptopetalum</i> , two additional species of ... ..                               | 84   |
| Godwin-Austen, (Lieut.-Col. H. H), land and fresh water Mol-<br>lusca of India ... .. | 112  |
| Government grants-in-aid, approval of ... ..                                          | 2    |
| Græco-Roman Influence on the Civilization of ancient India ...                        | 140  |
| Grierson, (G. A.), elected Member of Philological Committee ...                       | 46   |
| Growse, (F. S.), withdrawal of ... ..                                                 | 1    |
| Gun, presentation of a ... ..                                                         | 2    |
| „ old breech-loading, exhibition of ... ..                                            | 95   |
| Gupta Coins, exhibition of eight ... ..                                               | 117  |
| History and Archæological Committee, election of ...                                  | 47   |
| Hoernle, (Dr. A. F. R.), elected Philological Secretary ...                           | 37   |
| „ „ exhibited the old birch MS. from Kashgaria ...                                    | 54   |

|                                                                                                                                    |            |
|------------------------------------------------------------------------------------------------------------------------------------|------------|
| Hoernle, (Dr. A. F. R.), on the date of the Bower Manuscript ...                                                                   | 122        |
| "          "          first instalment of the Bower Manuscript,<br>transcript, translation and notes ...                           | 156        |
| Holland, (Thomas H.), elected an Ordinary Member ...                                                                               | 101        |
| <i>Holothurians</i> , list of Deep-Sea ...                                                                                         | 84         |
| Hoshangabad, find of old coins in ...                                                                                              | 83         |
| Hot-blast, fiery, note on a ...                                                                                                    | 94         |
| Hume, (A. O.), withdrawal of... ..                                                                                                 | 1          |
| Hyde, (Rev. H. B.), exhibited a transcript of the Original Returns<br>of Baptisms, Marriages and Burials between 1713 and 1754 ... | 84         |
| Ibbetson, (Denzil), withdrawal of ... ..                                                                                           | 154        |
| Indian Museum ... ..                                                                                                               | 14         |
| Inscription of the 7th Century A. D. ... ..                                                                                        | 5          |
| "          photograph of an, exhibition of a ... ..                                                                                | 47         |
| Insects, exhibition of two ... ..                                                                                                  | 94         |
| Investment, proposed, of the Society's Permanent Reserve Fund...                                                                   | 82         |
| Jabalpur, find of old coins in ... ..                                                                                              | 113        |
| Jahán Qudr Muhammad Wáhid Ali Bahádúr, (Prince), elected<br>Member of Council ... ..                                               | 37         |
| "          "          elected Member of Library Committee...                                                                       | 46         |
| Jalandar, find of old coins in ... ..                                                                                              | 116        |
| Jarrett, (Colonel H. S.), elected Member of Council ... ..                                                                         | 37         |
| Kangra, find of old coins in ... ..                                                                                                | 83         |
| Khanah, (Jagánnath), elected an Ordinary Member ... ..                                                                             | 46         |
| Khudá Baksh Khán Bahádúr, (Maulvi), elected Member of Philo-<br>logical Committee ... ..                                           | <i>ib.</i> |
| Kielhorn, (Professor F.), on the Dinájpur Copper Plate Inscrip-<br>tion of Mahipála ... ..                                         | 154        |
| King, (Dr. G.), elected Member of Natural History Committee ...                                                                    | 47         |
| "          "          elected Member of Physical Science Committee ...                                                             | <i>ib.</i> |
| "          "          flora of the Malayan Peninsula, No. 3...                                                                     | 75         |
| "          (Dr. W.), elected Treasurer ... ..                                                                                      | 37         |
| Kings, electing, some Indian Methods of ... ..                                                                                     | 135        |
| Kulastambha Deva, two Copper plates of king ... ..                                                                                 | 38         |
| Kupper, (Hon. Lala Bunbehari), elected an Ordinary Member ...                                                                      | 37         |
| Lafont, (Rev. Father E.), elected Member of Physical Science<br>Committee ... ..                                                   | 47         |
| Lathom-Browne, (Rev. D. G.), elected an Ordinary Member ...                                                                        | 93         |
| La Touche, (J. J. D.), elected Member of Physical Science Com-<br>mittee ... ..                                                    | 47         |





|                                                                                                  | <i>Page</i> |
|--------------------------------------------------------------------------------------------------|-------------|
| Multán, find of old Coins in ... ..                                                              | 131         |
| Narsinha Deva, thirteen Copper plates of king ... ..                                             | 38          |
| Natural History Committee, election of ... ..                                                    | 47          |
| "    "    Secretary, election of ... ..                                                          | 37          |
| <i>Nepeta</i> , undescribed Oriental species of ... ..                                           | 84          |
| New South Wales, Royal Society of, Circular from ... ..                                          | 54          |
| Nicéville, (L. de), elected Member of Council ... ..                                             | 37          |
| "    "    elected Member of Library Committee ... ..                                             | 46          |
| "    "    elected Member of Natural History Committee ... ..                                     | 47          |
| Noetling, (Dr. Fritz), elected Member of Natural History Com-<br>mittee ... ..                   | <i>ib.</i>  |
| "    "    elected Member of Physical Science Com-<br>mittee ... ..                               | <i>ib.</i>  |
| North-Western Provinces and Oudh, find of old Coins in ... ..                                    | 65          |
| Nyáyaratna, (Mahámahopádhya Pandit Moheśachandra), elected<br>Member of Library Committee ... .. | 46          |
| "    "    elected Member of Philological<br>Committee ... ..                                     | <i>ib.</i>  |
| Oldham, (R. D.), elected Member of Natural History Committee... ..                               | 47          |
| "    "    elected Member of Physical Science Committee ... ..                                    | <i>ib.</i>  |
| Paradise of the Northern Buddhists, drawing of the ... ..                                        | 70          |
| Peal, (S. E.), elected Member of Natural History Committee ... ..                                | 47          |
| Pedler, (A), elected Vice-President ... ..                                                       | 37          |
| "    "    elected Member of Physical Science Committee ... ..                                    | 47          |
| Permanent Reserve Fund, transfer of ... .. 38, 48, 82,                                           | 101         |
| Petley, (Lieut.), presentation of an old gun by ... ..                                           | 2           |
| Phillott, (Captain D. C.), elected Member of Philological Com-<br>mittee ... ..                  | 46          |
| Philological Committee, election of ... ..                                                       | <i>ib.</i>  |
| "    Secretary, election of ... ..                                                               | 37          |
| "    "    exhibited a photograph of an inscription ... ..                                        | 47          |
| "    "    exhibited Coins presented to the Society ... ..                                        | 65          |
| "    "    reports on find of old Coins ...65, 82, 113,                                           | 131         |
| "    "    exhibited eight gold Gupta Coins ... ..                                                | 117         |
| "    "    exhibited a Buddhist Chaitya ... ..                                                    | 119         |
| Photograph of the Inscription on the Monument which Comme-<br>morates the Patna Massacres ... .. | 47          |
| Physical Science Committee, election of ... ..                                                   | <i>ib.</i>  |
| Prain, (Dr. D.), elected Member of Physical Science Committee ... ..                             | <i>ib.</i>  |
| "    "    on an undescribed Oriental species of <i>Nepeta</i> ... ..                             | 84          |
| "    "    on the present condition of Barren Island ... ..                                       | <i>ib.</i>  |

|                                                                             | Page       |
|-----------------------------------------------------------------------------|------------|
| Prain, (Dr. D.), two additional species of <i>Glyptopetalum</i> ...         | 84         |
| „ „ vegetation of the <i>Coco</i> Group ...                                 | 138        |
| „ „ botanical visit to Little Andaman and the Nicobars ...                  | 156        |
| Presentations, announcement of 1, 37, 45, 53, 81, 93, 101, 111, 129, ...    | 153        |
| President—announced presentation of an old gun ...                          | 2          |
| „ inscription of Ghiyásu-d-din Balban ...                                   | <i>ib.</i> |
| „ translation of a Sanad by Akbar ...                                       | <i>ib.</i> |
| „ annual address of ...                                                     | 36         |
| „ election of... ...                                                        | 37         |
| „ letter from Fifth International Congress of Geologists, Washington ...    | 82         |
| „ letter from the Govt. of India on Lt.-Col. H. H. Godwin-Austen's work ... | 112        |
| „ remarks on the death of Rájá Rájendralála Mitra ...                       | <i>ib.</i> |
| „ obituary notice of Surgeon-Major A. Barclay ...                           | 130        |
| Publications, report on ...                                                 | 18         |
| Pubna, find of old Coins in ...                                             | 133        |
| Rainey, (H. James), note on a fiery hot-blast ...                           | 94         |
| Raverty, (Major H. G.), notes on some of the Muhammadan Coins ...           | 5          |
| Rawalpindi, find of old Coins in ...                                        | 132        |
| Returns of Baptisms, Marriages and Burials between 1713 and 1754 ...        | 84         |
| Rivett-Carnac, (J. H.), elected Member of Coins Committee ...               | 47         |
| „ „ elected Member of History and Archæological Committee ...               | <i>ib.</i> |
| Rosaries, lamaic, their kinds and uses ...                                  | 122        |
| Royal Society of New South Wales, Circular from ...                         | 54         |
| Rules, alterations of ...                                                   | 4, 46      |
| Ságar, find of old Coins in ...                                             | 114        |
| Samuells, (C. A.), withdrawal of ...                                        | 82         |
| Sanad, translation of a, by Akbar ...                                       | 2          |
| Sarkár, (Dr. Mahendralál), elected Member of Council ...                    | 37         |
| „ „ elected Member of Library Committee ...                                 | 46         |
| „ „ elected Member of Philological Committee ...                            | <i>ib.</i> |
| „ „ elected Member of Physical Science Committee ...                        | 47         |
| Sarvádhihari, (Rajkumár), elected Member of Philological Committee ...      | 46         |
| Sayid Ahmad, (Sir), elected Member of Philological Committee ...            | <i>ib.</i> |
| Sclater, (W. L.), elected Natural History Secretary ...                     | 37         |





|                                                                                | Page       |
|--------------------------------------------------------------------------------|------------|
| Tawney, (C. H.), elected Member of Council ...                                 | 37         |
| "    "    elected Member of Library Committee ...                              | 46         |
| "    "    elected Member of Philological Committee ...                         | <i>ib.</i> |
| "    "    mahākapijātaka ...                                                   | 120        |
| "    "    some Indian Methods of electing Kings ...                            | 135        |
| Temple, (Captain R. C.), elected Member of Philological Committee ...          | 46         |
| "    "    elected Member of History and Archaeological Committee ...           | 47         |
| Theobald, (W.), description of a two Cowree piece ...                          | 5          |
| "    "    a symbolical coin of the Wethâli dynasty ...                         | 14         |
| Thibaut, (Dr. G.), elected Member of Philological Committee ...                | 460        |
| Thuillier, (Col H.), elected Member of Physical Science Committee ...          | 47         |
| Thurston, (Edgar), elected an Ordinary Member ...                              | 129        |
| Tibet, coins of ...                                                            | 48         |
| Treasurer, election of ...                                                     | 37         |
| Troy weights and general currency of ancient Orissa...                         | 102        |
| 'Tsam-chhō-dung' (rtsa-mchhog-grong) of the Lamas ...                          | 95         |
| Uredineæ, additional, from the neighbourhood of Simla ...                      | 102        |
| Vegetation of the Coco Group ...                                               | 138        |
| Vice-Presidents, election of ...                                               | 37         |
| Votes on alteration of rules ...                                               | 4          |
| Votes on the proposed investment of the Society's Permanent Reserve Fund...    | 82, 101    |
| Waddell, (Dr. L. A.), 'tsam-chhō-dung' (rtsa-mchhog-grong) of the Lamas ...    | 95         |
| "    "    lamaic rosaries: their kinds and uses ...                            | 122        |
| Walsh, (Dr. J. H. Tull), elected Member of Natural History Committee ...       | 47         |
| "    "    on certain Spiders which mimic ants ...                              | 48         |
| "    "    proposal for the holding of Meetings ...                             | <i>ib.</i> |
| "    "    elected Member of Council ...                                        | 84         |
| "    "    list of Deep-Sea <i>Holothurians</i> ...                             | <i>ib.</i> |
| Wardha, find of old Coins in ...                                               | 116        |
| Waterhouse, (Colonel J.), elected Member of Finance and Visiting Committee ... | 46         |
| "    "    elected Member of Library Committee ...                              | <i>ib.</i> |
| "    "    elected Member of Physical Science Committee ...                     | 47         |
| "    "    electro-Chemical Reversals with thio-carbamides ...                  | 66         |

|                                                                                                                          | <i>Page</i> |
|--------------------------------------------------------------------------------------------------------------------------|-------------|
| Waterhouse, (Colonel J.), remarks on a communication from Mr.<br>W. McCarren                   ...                   ... | 73          |
| Wethâli dynasty, a symbolical coin of the                   ...                   ...                                    | 140         |
| Wilson, (C. R.), elected an Ordinary Member                   ...                   ...                                  | 81          |
| Withdrawal of Members                   ...                   ...                   1, 38, 46, 82, 130,                  | 154         |
| Wood-Mason, (J), elected Vice-President...                   ...                   ...                                   | 37          |
| ,,           ,,   elected Member of Finance and Visiting Com-<br>mittee ...                   ...                   ...  | 46          |
| ,,           ,,   elected Member of Library Committee                   ...                   ...                        | <i>ib.</i>  |
| ,,           ,,   elected Member of History and Archæological<br>Committee                   ...                   ...   | 47          |
| ,,           ,,   elected Member of Natural History Committee                   ...                   ...                | <i>ib.</i>  |
| ,,           ,,   elected Member of Physical Science Committee                   ...                   ...               | <i>ib.</i>  |





# ANNUAL ADDRESS

TO THE

# ASIATIC SOCIETY OF BENGAL

BY

THE PRESIDENT

H. BEVERIDGE, B. C. S.

*Calcutta, 4th February, 1891.*

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## ANNUAL ADDRESS.

GENTLEMEN,

I now rise to deliver the Annual Address. I do so with much diffidence, but am supported by the feeling that I am in my right, and am doing my duty. An authority whom the occupants of this chair are bound to revere has said, "Immemorial custom is transcendant law, ..... let every man therefore ..... who has a due reverence for the supreme spirit which dwells in him, diligently and constantly observe immemorial custom." The custom of an annual address is scarcely immemorial, but it is coeval with our Society, and so has prevailed for more than a hundred years—a period which represents, unfortunately, many generations of Anglo-Indians. I must follow the precedent set by a succession of distinguished men, but I may be allowed to point out that there is nothing in our rules which directs or empowers the President to deliver an annual address. The learned author of the history of our Society published in the Centenary volume says (p. 20) that the code of 1869 provided for an annual address, but I have been unable to find the provision in the rules of that year, and at all events there is no such rule in the code of 1876. If then the Society desire that the practice of giving an address should continue, it might be well to provide for it in the new edition of our rules which recent changes have made necessary. Provision might also be made then for a discussion of the annual report and the annual address, and I would suggest that the meeting in March might be set apart for the purpose. At present members have no opportunity of effectively discussing the annual report, for though it is the practice to invite remarks after the report has been read, there is no time at the February meeting for a discussion, and moreover members are not then in a position to discuss the report as they have not studied it.

The Report shows that in 1890, we lost six members by death. Among them was our former President Mr. E. F. T. Atkinson. His death was a great loss to our Society and to India. I made some remarks about his labours at the meeting in November, and shall now supplement them by the following remarks from the pen of Dr. George King.

"Mr. E. T. Atkinson came out to India, as a member of the Civil Service, in 1863. He was posted to the North-West Provinces where he soon began the active pursuit of his favourite science of Entomo-

logy. As a district officer, or as Judge of the Small Cause Court at Allahabad, however, it was impossible for him to specialise his studies; and he was obliged to find scope for his scientific instincts in the preparation of the Gazetteers of the N.-W. Provinces. A distinguishing feature of these, as compared with Gazetteers of other provinces prepared by less scientific writers, was the great prominence given to the description of natural products, both zoological and botanical. In 1882, Mr. Atkinson was appointed Accountant General of Bengal. This secured for him free access to the entomological treasures of the India Museum, and to the excellent libraries both of that institution and of our Society. The results were a series of valuable papers and catalogues of insects, the last of which was issued very shortly before Mr. Atkinson's lamented death. Almost the last work of his life was the formation of a complete index to his own entomological papers. In 1886 Mr. Atkinson was appointed Chairman of the Trustees of the India Museum; and to the affairs of that trust he gave, with characteristic devotion and single-mindedness, a large share of his leisure. In January 1889, Government showed its appreciation of his merits by conferring on him the title of C. I. E."

Mr. S. A. Hill the Metereological Reporter at Allahabad, and Professor of Physical Science in the Muir College there, was a valuable public servant, and unfortunately he died in the prime of life, and before he had done all his work. He contributed several papers to our Journal, and other publications, and has been described by Mr. Blanford in the columns of *Nature* as one of the best-known of the small band of scientific workers to whom we owe our present knowledge of Indian Meteorology. An abstract of Mr. Hill's more recent papers will be found at p. 95 of Colonel Waterhouse's Address for 1889.

Professor Bapu Deva Shastri, C. I. E. of Benares was a mathematician and astronomer, and was on this account made an Honorary Member of our Society. He contributed an article on Bhaskara's knowledge of the differential calculus to our Journal (XXVII, 213) and one on solar eclipses to our Proceedings for 1874. He assisted Professor Hall in editing the *Surya-Siddhanta*, translated part of the same work, and revised Mr. Wilkinson's translation of the *Siddhanta Siromani*.

I may be allowed to mention here Sir John Francis Davis the Chinese scholar who died in England in November last. He was not one of our members, but he was the son of Samuel Davis one of the founders of our Society, and whom we are all proud of, both for his scientific attainments and for his heroism at Benares. Sir John's name appears as the translator of one of the publications of our Society—*The Sorrows of Han*—but in fact that charming little drama, which on

account of its pathos and brevity I would strongly recommend you to read, was translated for the Oriental Translation Fund, and<sup>1</sup> was not published by us.

Miss Marianne North, though not a member of our Society, deserves mention here on account of her valuable contributions to Indian Botany. Miss North died at Alderton in Gloucestershire on the 30th August last. There is an interesting notice of her life and work by Mr. Helmsley in the *Journal of Botany* for November last.

The Report which has just been read shows that our financial position is fairly good. We have a large amount of Government paper (Rs. 134,700), and I should think that in this respect we compare favourably with most of the other learned Societies. Our receipts from subscriptions continue to be considerable. We have added to our income by letting two of our downstairs rooms to the Photographic Society for Rs. 60 a month, and we have procured exemption from income tax on our securities. On the other hand we have lost by the reduction of the Government rate of interest from  $4\frac{1}{2}$  to 4 per cent. In order to recoup ourselves for this loss, there is a proposal now before the Society to invest Rs. 50,000 in municipal debentures. Our printing charges, and the salary bills of our establishment are heavy, and so are our municipal taxes, and our postages. The municipal tax is Rs. 819 a year. We got a reduction when some of our land was taken away for the Park Street footpath, but the rates were raised afterwards so that practically we gained nothing. It is much to be wished that the Municipality could see their way to reduce or remit our tax, but it seems that there is some legal difficulty about this, which perhaps future legislation will remove. I commend the matter to such of our members as are Municipal Commissioners. The Municipality has lately come nobly forward to help the Calcutta Public Library, and we may therefore hope that it will be equally liberal to our venerable institution.

Our expenditure on postage amounted to Rs. 622. I fear that the reduction in the foreign letter postage will not help us much for our chief expense is in book and parcel postage. If we could be sure that our Agents would distribute our publications without undue delay, some saving might be made by reverting to the old practice of sending them to Europe in boxes. In the inland postage we have made a reduction by registering our Proceedings as a newspaper. In my opinion it would be well if we abandoned the separate publication of our proceedings, and made our *Journal* monthly instead of quarterly. If this were done all our periodical publications could be registered as newspapers. It is a common opinion now-a-days that quarterly publications are behind the age, and I am told that the palmy days of



Quarterlies have passed away, and that monthly Magazines are now in the ascendant. I am very anxious that our Society should not fall behind the times, and I have no wish to conceal from you that we are passing through a period of trial, and that there have been ominous mutterings about our delays and alleged somnolence. It is the fate of every institution to be called upon for the password, and if it be not ready with a reply, it must suffer the consequence. Or to speak in more homely phrase, we must show our ticket whenever the world's servants demand to see it, and if we have not got it, or it be not good enough, we must either get out, or take a lower seat.

We owe a considerable sum to our Agents Messrs. Kegan Paul, Trench and Trübner. This was chiefly caused by an abnormal expenditure some years ago on plates for the illustration of the Natural History part of our Journal.

Full accounts have not yet been received from our Agents, but as it is certain that we owe them a large sum we are taking steps to make them a remittance of £200. There is no doubt that we could with advantage spend much larger sums of money than we now do, and I am myself of opinion that we should not lock up our capital in the way that we have been doing for some years. It would be better to spend a portion of it so as to maintain the ancient renown of the Society, and to bring it abreast of modern requirements. We want money for many things. For example we have a valuable collection of pictures, but they are falling into decay, and we have no money wherewith to clean them, to renew the frames &c. If we are to keep the pictures we should keep them in good order, but I think it would be better to make them over,\* with the exception of the portraits, to an Art Gallery, should Government or the public ever see their way to establish such an institution. I understand that at present Government is bestirring itself in this matter, and that a Committee has been formed to select a site for an Art Gallery. The portraits are hung so high that they cannot be seen properly. Some of them want labels. We do not always know of whom the portraits are representations, and even when we do know this, we are not in a position to tell visitors, for what the original of each picture was distinguished. We certainly want a *Catalogue raisonné* of our portraits. We also want one for our busts, copper-plate inscriptions &c. The only one we have is that prepared in 1847 by our former Librarian Rájá Rájendralála Mitra, and it is in a great measure obsolete owing

\* It will, however, have to be seen if there is no legal difficulty in the way of our making over the pictures belonging to the Home bequest.

to the transfer of nearly all our collections to the Indian Museum. Our Library Rules, article 19, provide for separate registers being kept of copper-plate inscriptions, photographs &c. but I am sorry to say that they have not been prepared. They should not only be prepared, but also printed. We still have a collection of coins, but it is nearly useless to members or the public, because it is not catalogued, and is hidden away in an iron safe. A curious jumble of coins, medals and seals were found the other day in an obscure part of our stock-room. The box has been brought up-stairs, but we have no one at present with the requisite knowledge and leisure to examine and assort the contents. They consist chiefly of small and nearly worthless Hindu coins of base metal, of which the Stacy collection contained upwards of three thousand specimens,\* but the medals and seals are curious, and in the box there were two gold coins.

Our Society took an interest in coins from the beginning, and a paper on these appeared in the *Researches* for 1790. But we had no Museum till 1814, and it was not till the "thirties," that there was much activity among us in numismatics. James Prinsep kept this flame alight as well as others. Unfortunately we lost most of our specimens in 1844 by theft, though I have never seen any details of the occurrence. Some fifteen or sixteen years after that, we made a great effort, and purchased the Stacy† collection for Rs. 4,000. We acquired it in 1859, chiefly by subscriptions among our Members. Many additions have been made to our collection by donations and by means of the Treasure Trove Act. The Indian Museum has also a large collection of coins, but they too are invisible. A most expensive cabinet was purchased and sent out from England for the purpose of exhibiting the coins in the Museum. But it has never been brought into use. The reason given is the danger of theft, but this difficulty has been grappled with in other Museums. At all events it should not prevent the exhibition of facsimiles or having a catalogue. I venture to think that it is not necessary to have two collections of coins in one and the same street of Calcutta. Would it not be better to sell or otherwise transfer our collection to the Indian Museum? or if that is impracticable, or is disapproved of, might not the Museum give us their coins, and also their cabinet? If Government would do this, and would

\* We are said to have 3,497 of these. Sir Alexander Cunningham, J. A. S. B., for 1865, p. 123, says that Colonel Stacy got most of them at Gohad in Gwalior.

† It is to be regretted that we have no portrait or memoir of Colonel Stacy. We owe to him not only the collection of coins, but also the so-called Silenus group now in the Indian Museum. There is a reference to Colonel Stacy's enthusiasm in Prinsep's *Essays*, I, 197.

also contribute something to the appointment of a numismatist, we might have one good collection of coins in Calcutta, and have it properly exhibited and cared for. I think that we should no longer be dependent upon chance in this matter. At present, now that Dr. Hoernle is away, we have no one who can deal with the coins of all descriptions which we are constantly receiving under the Treasure Trove Act, although Mr. Tawney has kindly agreed to carry on a portion of the duties. It may be said that numismatists are not to be found in India, but I do not see why a young man, either European or Native, could not train himself to be a numismatist. If Calcutta could not afford the whole expense of the appointment, his services might occasionally be lent to the other Presidencies. If we are to keep our coins, I strongly recommend that should a vacancy occur in our paid staff it should be filled up by one who either is, or is willing to become a numismatist.

Another thing which we are much in want of is an analytical index to our Journal &c. Mr. Bose has given us such an index to the scientific papers, but we want one for the other half of our Journal. In referring to this, Dr. Mitra writes (Centenary vol. p. 55) "A carefully-arranged analytical index to the entire set is what is now much needed, and it is to be hoped that the beginning of the second century of the Society's career will be signalised by such a compilation." I am sorry to say that nothing has yet been done to fulfil this hope.

Our Library is deficient in many respects. We have not got many books that we ought to have, and we are at present without means of buying them. The time too is approaching for making a new Catalogue, or for publishing a supplement thereto. At all events we ought to have a Catalogue prepared according to subjects. Our Library is about the best thing we now have, and it is with reference to it that we are chiefly judged by Mofussil members and the outside public. It behoves us therefore to keep it in good condition. It is a fine Library, and has many rare and valuable books, but we must look to our laurels now that the Calcutta Public Library has been resuscitated and is entering into competition with us.

I submit also that a great Society like ours should do something towards the endowment of research. For example, we might spend something on an inquiry into the origin of the 'Barisál guns,' as they are called. We must guard against the danger of living on our past reputation or of trusting to our age for reverence.

It is not growing like a tree  
In bulk, doth make us better be  
Or standing long an oak, three hundred year  
To fall a log at last, dry, bald, and sere.



A duty which seems to press upon us, and which might result in gain rather than loss, is that of making one or two volumes of selections from our records. I would especially urge that all Mr. Blochmann's contributions should be collected into a separate volume. Everything he wrote is worth preserving. We have a bust of him in our hall, but, as Lady Jones tells us in the preface to her husband's works, the opinion of Sir William Jones was that the best monument that could be erected to a man of literary talents was a good edition of his writings.

Then we want a general overhauling of our records. Our rooms downstairs contain piles of letters, accounts &c. which should be sifted, and partially destroyed. We have a long box full of rubbings, but there is no catalogue of them, and we have an almirah full of copper-plate inscriptions which surely ought to be kept under glass in such a way that they may be readily examined. We have also many xylographs, photographs &c. which should be catalogued. All these things mean extra establishments, and consequently extra expenditure, and at present I do not see where the money is to come from. Should it ever come, I would also plead for the appointment of a Maulavi. At present we have only a Pandit, and in these days of justice to Mahomedans we should have a Semitic scholar.

It is much to be regretted, and is to me rather incomprehensible that so few people have ever made us donations of money. It almost makes one disloyal, and inclined to wish for the days when Oudh was a kingdom to read that in 1829 the king of Oudh gave us Rs. 20,000 and his prime minister Rs. 5,000. We have had no such gifts since except in 1834 when a Mr. Bruce left us £2,000.

In thinking over the condition of our Society, and in considering what defects, if any, exist on its constitution, and in what way our Society might be improved, I have been struck with the idea that what we want is concentration of effort, and limitation of scope. I think that our lines are too extended. It is true that we have authority for wide views in the motto which stands on the covers of our Journal and Proceedings. Sir William Jones is there quoted as saying "the bounds of its investigations will be the geographical limits of Asia; and within these limits its inquiries will be extended to whatever is performed by men, or produced by nature." It will surprise you to learn that this sentence does not occur in Sir William Jones's works. As Rájá Rájendralála Mitra has pointed out in his valuable history of our Society, the words are a paraphrase of what Sir William Jones said, or rather, they are an abridgment of his remarks. They are taken, with omissions and slight alterations from the preliminary discourse which he delivered in January 1784. The precise collocation of words which forms our motto is not to be



found in the discourse, but it correctly represents Sir William's meaning. If it err at all, it does so by restriction, for even Asia was not enough for Sir William Jones. He wanted to add Egypt and Abyssinia. I desire to speak with all respect of Sir William Jones. He is our immortal Founder, and the pride of every Anglo-Indian. After labouring among us for ten years he left his bones in this city where they lie under "a star-y-pointing pyramid.\*

But Sir William had a poetical mind, and somewhat of a turn for exuberant rhetoric. He had sate with Dr. Johnson at the Club, and had there imbibed perhaps a taste for Johnsonese. We must not press closely the language of a man who could describe castor-oil as "that noble deobstruent oil, extracted from the Eranda nut." Besides, Sir William Jones was speaking in the early days of oriental learning, and when the wealth of each plot of the field of research was not known. Ours was then the only Society in India. Now we have Societies at Madras and Bombay, the Indian Antiquary &c. I would remind you too that the title of our Society has been changed since the days of Sir William Jones. The original title was the Asiatick Society, the adjective Asiatick having been adopted by Sir William as being more definite than that of Oriental. Our first publication was the Asiatick Researches and in a sub-title they were described as the Transactions of a Society instituted in Bengal for enquiring into the history and antiquities, the arts, sciences and literature of Asia. But in 1832 or at least, in 1851, we became the Asiatic Society of Bengal, and our Journal was called the Journal of the Asiatic Society of Bengal. I think that we should accept the change which seems implied by the change of name, and confine our investigations as much as possible to the Bengal Presidency. Practically we have done this for many years—at least so far as Part I of the Journal is concerned. It is rarely that we have a literary paper dealing with Madras or Bombay. Our venerable Society is like Milton's banian tree.

" Branching so broad and long that on the ground  
The bended twigs take root, and daughters grow  
About the mother tree."

Perhaps some of the daughters may think that they are now taller than their mother, but it was she who reared them for all that. The parent trunk too is still green and vigorous. The number and value

\* Our Park Street cemetery has not many famous tombs, but two are of great interest, Rose Aylmer's and Sir William Jones'. It is pleasant to see from our Proceedings for 1835, p. 288 that the Society has regarded it as a pious duty to keep Sir William Jones' monument in repair. One of the epitaphs was, it seems, written by Sir William himself.

of the contributions to both parts of our Journal which we continue to receive is a proof of this. It will be remembered that Sir William Jones insisted upon this as a note or condition of life. "It will flourish," he said in words which appear on the title page of our Journal, if naturalists, chemists, antiquaries, philologists and men of science in different parts of Asia will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die if they shall entirely cease." Contributions from all Asia we must of course give up if we ever possessed them, but our contributions from India are richer than ever. The difficulty rather is that we get too many and are not able to print them fast enough. This is a matter of great regret to me for nothing can be more disheartening to a writer or inquirer than to have his paper shelved. Delay, however, is not always avoidable. It often happens that papers require photographs for their illustration, and have to be kept back till these are ready. Sometimes the publication of our Journal is delayed by the necessity of sending proofs to England for correction. The Council and the Secretaries are fully aware of the importance of keeping contributors in good heart, and are doing their best to accelerate publication and transmission. In the matter of transmission the step has been taken of registering the Proceedings as a newspaper, and of posting them separately from the Journals.

It is much to be regretted that so few native gentlemen take a prominent part in our meetings, and that so few, comparatively speaking, are members. Doubtless the chief reason why we have not more native members is that the subscription is rather high. Another reason, I am afraid, is that we are not a government institution. I have sometimes thought that we might do more to attract native gentlemen. For instance, might we not at all, or at least at some of our meetings allow natives of India to speak in their mother tongue? And might we not have meetings devoted to Sanscrit studies? I dare say some pandits would join us if they were allowed to discuss questions of Sanscrit grammar in Bengali. Might we not also revive the custom of lectures? They may not succeed well in the cold weather when the pursuit of pleasure is paramount, but they might answer in the hot weather and rains. We have an excellent hall for lectures, and we do not make sufficient use of it, or sufficiently take advantage of the admirable site of our building. Perhaps we do not make ourselves prominent enough. It seems that many people do not even know what the building at the corner of Park Street and Chowringhee is. We might remove this ignorance by having a brass plate at our gate. We might also have conversazioni, or even revive the old practice of

an annual dinner. We are not a rigidly scientific Society. We are and always have been, a Society composed mainly of amateurs, and there would be no harm, I think, in our courting publicity. We must march with the times and be on our guard against anachronisms. We have, I think, too many of them. The motto on our covers is, I think, an anachronism, and the fact of its not being an exact copy of Sir William Jones's words would of itself be a sufficient reason for removing it. Similarly the representation of our building which appears on our covers is an anachronism. It is meant to represent the south side of the building, but the verandah there depicted is now enclosed. At the entrance we have a marble tablet describing the building as the Library and Museum of the Asiatic Society, but we no longer have a Museum. Upstairs we have an Asoka stone with a tablet over it containing a badly worded inscription. The tablet is out of place because it no longer stands under Prinsep's bust, and the words on it imply that Prinsep deciphered the inscription on the stone below. In fact poor Prinsep never saw the stone, and it was not brought to Calcutta till after his death. The discoverer of it was Captain Burt.

Whoever examines our Journal and Proceedings must be struck with the increase of late years in the number and importance of the papers relating to Natural History. Part II of our Journal is now, I suppose, the most valuable part of it, for nearly all the papers there are by men who are masters of their subjects, and who are naturalists or physicists by profession. Part I on the other hand is mainly contributed to by amateurs, and it holds its ground against the publications of the Societies chiefly by the local knowledge of our writers and their favourable position in India for antiquarian researches. For a while Natural History was somewhat in the background in our Society. Mr. P. N. Bose ascribes this to Sir William Jones's aversion to zoological study on the ground that it involved cruelty to animals. It is true that he objected to birds and butterflies being killed because they had the misfortune to be rare or beautiful, and I daresay he was half a brahman in his tenderness to animal life. But it is wrong, I think, to say that he was opposed to the study of Zoology. He himself contributed three articles on Indian Zoology to the Researches, *viz.*, on the Baya or Indian Grossbeak, on the Pangolin, and on the Loris or slow-paced Lemur. At the end of one of these articles he writes that "there are in our Indian provinces many animals, and many hundreds of medicinal plants which have not been described at all, or what is worse, ill described by the naturalists of Europe, and to procure perfect descriptions of these from actual examination, with accounts of their several



uses in medicine, diet and manufactures appears to be one of the most important objects of our Society." The truth is, that Natural History had hardly attained the dignity of a science in the early days of our Society. We were established in 1784, and it was at about that time that some scientific men were horrified at the idea of a mere naturalist like Sir Joseph Banks sitting in the chair of Newton. Mathematics and the physical sciences connected therewith were then the favourites, and as Mr. Bose remarks "down to 1828 the only scientific contributions of any importance received by the Society were connected with some branch or other of mathematics." Later on, and especially after the arrival of that distinguished naturalist, Edward Blyth, Zoological studies came to the front in our publications. Mr. Bose's classified index show how the zoological papers went on increasing—especially those on the Invertebrata. His index only goes down to 1882, and if we had one for the past eight years, it would show a still greater rate of increase. Unfortunately the Natural History papers are somewhat expensive on account of the number of plates required. They are also, I fear, not generally popular with our members. Nearly all our members are amateurs rather than scientists, and many of these are native gentlemen among whom a taste for natural history has hardly yet been awakened. At all events it can only have been very few of us who appreciated the lengthy catalogues of insects which were published not long ago. I do not for a moment doubt the utility of such catalogues, or grudge praise to the gentlemen who have devoted much labour and skill to their compilation. I doubt, however, their suitability to our Journal. It was by its antiquarian and philological researches that the Asiatic Society originally made its reputation, and I am inclined to think that it is by such researches that it will best maintain its ground. We have an immense advantage over foreign Societies in our being able to get contributions from Government officers and others living in the interior, and in being able to get help from the natives of the country. In pure scholarship we cannot compete with Paris or Berlin, but wherever local knowledge comes in, we can pull them over the line.

If there was any doubt as to which was the most popular part of our Journal, I believe that the question could be very easily settled by offering to halve or otherwise reduce the subscriptions of Members who were content to take only one part of the Journal. I have no doubt that the great majority would choose Part I.

We seldom get geological papers now, for the Geological Survey has its own Memoirs, and it has occurred to me that it might be well if the publication called Indian Museum Notes were enlarged, and all purely technical papers brought out in it instead of in our Journal.



Might it not even be possible to found a Natural History Society in the same way as the Microscopical Society has been founded? The resources of our Society are limited, and I suppose that we are about the only Oriental Society that has two distinct departments, and which tries to carry on *pari passu* antiquarian and physical research.

This is a delicate matter to touch upon, and I hasten to get away from it. One thing, however, I should like to say is, that if we keep to our two departments, and make no change in the Journal, it might be advantageous to substitute fortnightly for monthly meetings, and to have one for literary subjects, and the other for zoology, &c. The present system, I think, wastes the time of members, and deters many from attending. For under it only about half of the audience is interested in any paper that is being read. As a rule the zoologist does not care for inscriptions or coins, and the numismatist or philologist does not care for animals or plants.

*Progress of Oriental scholarship, and of the sciences so far as they relate to India.*

I now proceed to give the annual synopsis of scholarship and science which the President of the Asiatic Society is expected to make. Here I feel my deficiencies most of all. I have been all my life a bit of a reformer, and have found a pleasure in making suggestions for seeming improvements. But the case is different when I find myself confronted by severe studies who when interrogated by a profane person, are apt to remain silent and averse like the senators at the sack of Rome. In my early days I was fond of geology and botany, and also dabbled in chemistry, but in thirty-three years of Indian official life such tastes have been atrophied, and I do not intend to say a word of my own about natural science. I have sought assistance among the specialists of our Society, and it has been liberally granted to me. Colonel Waterhouse has given me a paper on the progress of geography, and Drs. George and William King, and Messrs. Pedler, Sclater, and Cotes have given me similar assistance for their respective departments. I have also received valuable aid from Pundit Hara Prasád Shástri and Babu Saratchandra Dás.

In philology I have myself done so far that I have gone through the books and periodicals available to me, and have noticed what seemed to me likely to be of interest to members. I know that this selection is very imperfect, but I believe it to be useful, especially to native members, and so I have made the attempt. It seems to me most desirable that native and Mofussil members should be informed of the progress of European scholarship, and I regret that the practice of publishing

Literary Intelligence in our Proceedings has fallen into desuetude. If you will look up the back numbers of our publications, you will find that the Secretary used to give a quarterly precis under the title of Literary Intelligence.\* If our present hardworked Secretaries could do this every month in our Proceedings it would be a great gain, but if they cannot I almost think it would be worth while to get a naturalist and a philologist at home to give us monthly letters.

It would be something if even the titles of articles in oriental Journals were published in our Proceedings. This would be better than wasting type and money in publishing lists of books and periodicals purchased. It is needless, I think, to mention every month that we have got a new number of the *19th Century*, or that 4 numbers of *Nature* have been received.

#### I.—OUR SOCIETY'S PUBLICATIONS.

Two numbers of the literary portion of our Journal, and eight of the Proceedings (for 1890) were published during the year. The first number of the Journal contains an account by Babu Gaur Das Bysakh of the Buddhist monastery† founded in the last century at Ghusari opposite to Calcutta. I venture to think that this is an article eminently suited to our Journal. It deals with Calcutta which is our centre, and everything in connection with which is interesting to us, and it brings before us our earliest patron, Warren Hastings, the great *untitled* Governor-General.

It is well-known to many of you that Babu Gaur Das Bysakh takes a keen interest in the antiquities of his native city, and that he is anxious to do for Bengali Calcutta what Busteed and others have so well done for the English part of the town. I am sorry to say that he has received a temporary check by his not having been allowed to examine the records of the Board of Revenue which are believed to contain many Persian and Bengali papers relating to the origin of the native town. I trust, however, that this difficulty will one day be overcome.

I do not feel quite so sure about the value of the articles on the Chhattisgarhi dialect which occupy so much of Nos. 1 and 2. I fear that they are too technical, and that they are more suited to the publications of a local Society. Chhattisgarh has lately had a considerable amount of attention from our Society, for in addition to these two

\* See Vol. XXXIII, pp. 199, 441 &c.

† I have been told that there are papers in the Bengal Office relating to the grant to Puran Gir Gosain. I hope that Babu Gaur Das will succeed in getting possession of them.

articles, we have had an elaborate paper on the district from Babu Prio Nath Basu.

No. 2 contains a valuable article on coins by Dr. Hoernle, and he has also contributed several papers on coins to the Proceedings. We have during the year published a monograph by Mr. Vincent Smith on Græco-Roman influence on the civilization of Ancient India. Mr. Smith's article is suggestive and perhaps somewhat daring, and it will probably excite a good deal of controversy. I can only hope, though it is with a hope against hope, that the controversy will be carried on without acrimony, and that nations as well as individuals will see that there is no disgrace in having been glad to learn. The subject of Mr. Smith's paper has been treated of in a very interesting address by Professor Weber to the Prussian Academy of Sciences. This paper, which was read on the 17th July last, is called the Greeks in India, and well deserves to be translated. Reference may also be made to Vol. XXV of the Sacred Books of the East, Rhys Davids' translation of the Questions of King Milinda. The original is a Pali rendering of an Indian work which is now lost. The interesting thing about the work is that Milinda is a corruption of Menander, one of the kings of Bactria. Milinda tells his Buddhist instructor that he was born at Kalasi (Karisi) in Alasanda (Alexandria) which was an island in the Indus. Menander flourished in the latter half of the 2nd century B. C. and was one of the Greek kings who penetrated furthest into India. He crossed the Sutlej and probably reached the Jumna. It seems that India reacted upon him and that he became a Buddhist. It may be remembered that Gibbon hazarded the conjecture that India owed much of her civilization to the Greek kingdom of Bactria, and it would seem that this conjecture, like most of Gibbon's guesses at truth, was well founded.

Mr. Vincent has also a note in our Proceedings on the coins of the Pala Devas. A supplement to the Journal for 1889, which apparently should have been called Part IV, contains a descriptive catalogue by Dr. Hoernle of the coins of Central Asia collected by Captain Laessoe. This catalogue has given rise to an interesting historical article by Major Raverty which was read at our December meeting. Our Proceedings contain some papers which are none the worse for being short. Among them we have an article on that old subject the 'Barisál Guns' which seems to be as much a mystery as ever, and which, to use an expression of the Duke of Argyll, as yet shows no parallax, no sign that we have advanced to another point of observation. Babu Saratchandra Dás has a paper on the Tibetan Cosmogony, and the Tibetan Zodiac. It is curious that the apparently domed shape of the heavens, which Longfellow has compared to the inverted hand of God, should have suggested to the



Tibetans the idea of a gigantic tortoise. Dr. Waddell gives us an inscription from Monghyr which contains that pearl of great price in Indian inscriptions—a legible date. Pandit Haraprasad Shastri tells us of the Orissa gun with its inscription. I am glad to say that the gun is now in our possession, it having been kindly presented to us by Captain Petley. It adorns the grass plot in front of our building.

A copperplate inscription found at Ashrafpur in the Dacca district was bought by the Society, and has been deciphered and translated by Raja Rajendralala Mitra. It will be published in Part III of the Journal. A birch-bark manuscript has been presented to us by Lieutenant Bower, but unfortunately no one has yet been found able to read it. One fasciculus of the Catalogue of Persian and Arabic printed books, and MSS. in our Library has been published—an important piece of work which we owe to Dr. Hoerle; what we now want is a similar catalogue of our Sanscrit books and MSS.

#### BIBLIOTHECA INDICA.

The present series began in 1848. Long before that our Society had published several original texts. The name originally (1806) given to the series was *Bibliotheca Asiatica*, and I think that the change of title to *Bibliotheca Indica* is significant and was intended to mark that only books relating to India should be published. In 1835 we took over the unfinished publications of the Committee of Public Instruction. Among them was the *Fatawa Alamgiri* or the Digest of Aurangzeb. Though I do not approve generally of our spending money on translations, and think that our chief work should be the printing of original texts, and so making the extinction of valuable works impossible, I submit that it is most desirable that the *Fatawa Alamgiri* should be translated. It is a storehouse of Muhammadan law and the compilation of it under Aurangzeb's orders was perhaps the greatest work of his reign. It entitles him to the appellation of the Indian Justinian. Unfortunately his bigotry or that of his Tribonians caused the work to be composed in Arabic rather than in Persian or Urdu. Perhaps the translation of it is a work to be undertaken by Government rather than by our Society, but in any case it is very unfortunate that the work has not been done except partially and by a private individual (Mr. Baillie).

The Government grant consists of Rs. 500 a month for Sanscrit, and Rs. 250 a month for the Semitic languages. Now that Sanscrit works find many purchasers, and that private persons find it profitable to publish them, I think that the division might be reversed, and Rs. 500 a month allowed to the Semitic languages *i. e.* to Persian and Urdu. Our annual reports show that in the *Bibliotheca Indica* department we



have a long list of works which have been sanctioned for publication years ago, but which have not been begun. In most cases this has been the result of want of funds, but it has sometimes been caused by want of editors. I think it would be better finally to abandon some of these projects. We have surely enough now of Sanscrit religious literature, and might leave Vedas and Puranas to indigenous Societies. What we want most, I think, is a complete set of historical works. These are mostly by Muhammadans but one history by a Hindu ought I think, to be published, for this reason, if no other that it is the work of a Hindu. I refer to the *Kholasat-ut-Tawarikh* by Subhan Rai of Pattiala, (see Elliot, VIII, 5 and 8.)

A valuable memorandum on the Persian series of the *Bibliotheca Indica* was drawn up by Sir Edward Bayley and published in our Proceedings for 1864 pp. 464 *et seq.* One of our members has offered to translate the *Siyar-ul-Mutaqarin*. This would be a most valuable performance for Raymond's (Haji Mustapha) translation is full of galli-cisms, and there is so much obscenity in his notes that it is unfit for being reprinted. Colonel Briggs' translation does not go beyond the first volume, and it is doubtful if the original is really by Gholam Hoossein. I may note here that there is an interesting reference to Gholam Hoossein in Sir William Jones' works, I, 149.

Colonel Jarrett has made considerable progress with the translation of the *Ain Akbari*, which Professor Blochmann, unhappily did not live to finish. The first fasciculus of the continuation will appear shortly. The edition of the Persian text of the *Riyaz-us-Salatin*, or *History of Bengal*, has been finished.

Besides the grant of Rs. 500 for Sanscrit literature we have a grant of Rs. 3,200 a year for the collection and cataloguing of Sanscrit MSS. This grant will shortly cease.

I owe the following remarks on the publications of the *Bibliotheca Indica* to Pandit Hara Prasad Shastri.

"Forty-five fasciculi were issued during the year under review. Of the works in progress the Council discontinued the publication of the translations of the *Riyaz us Salatin* and *Tuzuk i-Jahangiri*. Five works in the Sanskrit series were completed; of these the most important is the *Nyáyavindu Tiká* by Professor Peterson of Bombay. While editing the commentary from a solitary Buddhist MS. found in India, the learned Professor was fortunate enough to obtain the original work to which the commentary referred. Both the original and the commentary have been published in one fasciculus consisting of 134 pages. This was the standard work on Buddhist logic, and was formerly known to the learned world only in a Chinese translation. The other

work of importance is the Advaita Brahma Siddhi which attempts to establish the nondual theory of the Vedant philosophy by refuting the doctrines of both the orthodox and heterodox systems of Indian philosophy."

#### ARCHÆOLOGICAL SURVEY, &c.

Parts IV—VI of the *Epigraphia Indica* were received during the year. All of these contain valuable inscriptions. Part IV has already been noticed in Colonel Waterhouse's Address. As mentioned by him, it contains a translation by Professor Kielhorn of the great Siyadoni inscription in the Lalitpur district of the N.-W. Provinces. It is in 46 lines and is over 3 feet in height and over 5 feet in breadth. This is the inscription originally mentioned by Dr. Hall, and which is referred to by Dr. Hoernle at p. 208 of the Centenary volume. Part V contains a translation by Dr. Bühler of an inscription which has been for many years at Cintra in Portugal, and was described by Murphy in his travels in that country in the last century, but which originally belonged to Somnath in Gujrat. Part VI contains a new transcript and translation by Professor Kielhorn of the inscription found many years ago at Deopara in Rajshahye and which is a panegyric on Vijayasen the grandfather of Lakshmansen. The inscription was composed by Umá-patidhara, and Professor Kielhorn has no doubt\* that this is the poet whose "branching words" are referred to in the *Gitagovind*. The work on the Sharqi architecture of Jaunpur by Drs. Burgess and Führer, and Mr. E. Smith was noticed in Colonel Waterhouse's Address. I think that the editor, Dr. Burgess, should have mentioned that nearly all the historical introduction had appeared in the *Calcutta Review* so long ago as 1865 (Vol. XLI, 114). I presume that either Dr. Burgess or Dr. Führer wrote that article, but when the sources of the introduction were given in a foot-note, the *Calcutta Review* might also have been referred to. I cannot understand how the reviewer came to describe Jaunpur as a place free from painful memories, and how this remark has been reproduced without comment. The Sikh detachment there mutinied on 5th June 1857 and shot Lieutenant Mara their officer and Cuppage the Joint-Magistrate† and the place was for months a centre of disaffection, just as it was in Akbar's time. The same volume contains an important inscription found by Mr. Hoey at Sahet-Mahet on the Rápti (the Buddhist Srávasti). It shows that Buddhism existed there as late as 1219. But it also seems to show that Buddhism

\* The identification had already been made by Raja Rajendralala Mitra when he translated the inscription for our Society.

† Kaye II, 238.

was merging into Hinduism, for there are several allusions to the worship of Siva and Vishnu. Dr. Führer, pp. 68, 69, rejects Mr. Carlleyle's identification of Bhuila Tál with Kapilavastu the birthplace of Sákyamuni. Mr. Hoey's work on Sahet-Mahet is now being published by our Society.

It is a subject for much rejoicing that the Broadley Museum at Bihar is likely to be soon removed at Calcutta and placed in the Indian Museum. That institution continues to be visited by crowds of natives,\* but I fear that they do not look at the antiquities with discerning eyes. Matters might be improved if hand-books or guide-books in the vernacular were drawn up and sold at cheap rates. Or possibly guides might be appointed and their services given to parties of natives at a low figure. The statues &c. should also I think have labels in Bengali and Nagari.

#### OTHER SOCIETIES.

We did not receive any number of the Journal of the Royal Asiatic Society or of its branch in Bombay last year. The Journal for 1889 of the Bombay branch was noticed in Colonel Waterhouse's Address. I may remark in addition to what is there said that M. Senart's paper on the new Asoka edict, to wit the 12th, discovered at Shahbazgarhi by Captain Deane contains what seems to be some very sensible observations on the utility of Asoka's inscriptions. M. Senart points out that they occur in desert places, and are so placed there that they cannot be conveniently read. Though very carefully engraved, they cannot be read in their entirety from the foot of the rock, and even with the help of a ladder it is not easy to read them. In some cases he had to travel over the rock on all fours, and then read the lines upside down. M. Senart thinks therefore that the inscriptions were regarded by Asoka rather as means of acquiring merit, than as works of public utility. This view, he thinks, explains why the inscriptions are not in the local dialects. There is also a paper on a Sanscrit inscription from Java, and another in which a Portuguese gentleman tries, vainly as it appears to me, to show that Dillon's account of the Goa Inquisition is a forgery.

\* The number of visitors in 1889-90 is said to have been nearly half a million (412,953), and this is exclusive of students. The omission to count students is curious. Their number would be a valuable test of the usefulness of the Museum. One may be allowed to doubt the accuracy of the record of the number of visitors. There are no turnstiles, and it is well-known that when turnstiles were introduced at the National Gallery in London, it was found that the record fell off considerably, indicating that previously there had been over-counting. Possibly children in arms are counted. It might be well to improve the finances of the Museum by opening it on Thursdays and Fridays for payment.



The Indian Antiquary contains so many valuable articles that it is hopeless for me to notice them separately. It is especially strong in articles about eras and dates. An interesting feature of the Indian Antiquary is that it gives from time to time notes on the progress of European scholarship. I have already said that we ought to do something of this kind in our Proceedings.

Before leaving Indian periodicals I may notice an interesting article on the first Bengal Chaplain which was contributed to the Indian Church Quarterly for January 1890 by our member the Rev. H. B. Hyde.

#### BOOKS PUBLISHED IN INDIA.

Among valuable works published in India last year I may notice the History of Ancient Civilization in India by our member Mr. Romesh Chundra Dutt. Mr. Dutt has now completed his history, and it may be recommended to all unprejudiced inquirers as very pleasant reading, and as giving a very fair account of Indian civilization. Naturally he has offended some of his countrymen. Mr. Dutt's work should partially take the place of Mrs. Manning's which was long the only popular book on the subject. The publication in parts of Babu Pratap Chandra Rai's translation of the Mahabharat still goes on. The translator has now published the 63rd Part containing a portion of the Santi Parva. Dr. Watt's great work, the Dictionary of the Economic Products of India is now far advanced. Four volumes are ready, and two more will be published this year. The seventh will contain the index. It is to be regretted that Government has not supplied us with a copy of the four volumes that have been published. Professor Forrest's Selections from India State Papers from 1772—85 are an important addition to Hastings' literature. Mr. Forrest would confer another boon on historical inquirers if he would republish with notes the trial of Nanda Kumar.

The Report on Indian publications during 1889 shows that the minds of the people are being considerably stirred, especially about religious questions. The Madras report observes that the preponderance of religious works is very marked, and, that they amounted to 45 per. cent. of the literature published during the year. There were 611 religious books and tracts of which 384 were Hindu, 157 Christian and 49 Mahomedan. In Bombay, at least one valuable historical book was published, a translation by Munshi Hosain Khan of the Ruqqaât Alamgiri, or letters of Aurangzeb.\* Among the Maráthi publications there were the Lilavati, the Chronicle of Pánipat,

\* Elliot VII, 203.



written two years after the battle by Raghu Náth Yádv,\* and a drama called the Nyáyavijaya Nátak on the Crawford case. In Gujrati, there was a translation of Lady Audley's Secret! Other important publications in Bombay are the Rigveda with Sáynáchárya's Commentary, of which about three-fourth has been issued, and Peterson's edition of Bána's Kadambari. Mr. Satyendra Nath Tagore's Bombay Sketches, though the work of a Bombay civilian was published in Calcutta.

I should add to these works Mr. Lewis Rice's "Inscriptions at Sravana Belgola" which was published at Bangalore by the Archaeological Survey of Mysore in 1889. This is a very valuable book. It contains a photograph and description of the colossal statue of Gomata, (Gomatesvara) and copies of 144 inscriptions. Inscription No. 1 called the Bhadrabáhu inscription is perhaps older than any of Asoka's. It is on the hill called Chandragiri which is said to derive its name from Chandragupta of Patna, the Sandracottos of the Greeks. According to the Southern India tradition Chandragupta was a Jain and the disciple of Bhadrabáhu. He is said to have abdicated, and to have assumed the name of Prabhúchandra on entering into religion. It is under this name that he is mentioned in the Bhadrabáhu inscription.† Mr. Rice gives an account of the curious rite of *sallekhana*‡ or the obtaining of euthanasia by fasting. Many inscriptions record such religious suicides by men and women. Mr. Rice says "of the contents of these inscriptions it is unnecessary to say anything. They are painfully plain as to the main object for which they were recorded. The bitterest satirist of human delusions could hardly depict a scene of sterner irony than the naked summit of this bare rock§ (Chandragiri) dotted

\* Raghu Nath's account is referred to by Grant Duff, II, 144n., but perhaps Mr. Sânc has printed it for the first time. The battle was on 6th January, 1761.

† His grandson Asoka is also said to have been originally a Jain. The Bhábra (or Bairat) edict now in our ante-room is the only one in which the name of Buddha occurs (Corp. Inscript. Ind. I, 25). Though the inscription is a short one the name, Buddha, is mentioned in it three times. For a facsimile of this inscription see the Journal Asiatique for 1887, Vol. IX, 498.

‡ "He should by degrees diminish his food, and take only rice seasoned with milk. Then, giving up the milk, he should gradually reduce himself to only a handful of water. Then, abandoning even the handful of liquid, he should according to his strength, remain entirely fasting; and thus, with his mind intent upon the five kinds of reverence, should by every effort quit his body. Desire of life, or of death, remembrance of fear, or friendship, action, these five are transgressions of *Sallékhana*, thus say the five Jinendras."

§ We are reminded here of Matthew Arnold's "lonely inn 'mid the rocks;"

"Where the gaunt and taciturn host  
Stands on the threshold, the wind  
Shaking his thin white hairs."

with emaciated devotees, both men and women, in silent torture awaiting the hour of self-imposed death. The irony is complete when we remember that avoidance of the destruction of life in whatever form is a fundamental doctrine of the sect."

#### JOURNAL OF THE AMERICAN ORIENTAL SOCIETY.

The great article by Prof. Hopkins on the position of the ruling caste in Ancient India was noticed in the last Annual Address. The 14th volume published in 1890 contains the text of the Kausika Sutra of the Atharva Veda by Prof. Bloomfield. The Proceedings for the Society for May 1885 but published in the volume for 1889 contain an article on the Garo language by Prof. Avery which should be interesting to us in Bengal. The author claims for the American Baptist Missionaries the merit of having been the first to reduce the Garo language to writing, but Mr. John Eliot gave a list of Garo words in the Researches of our Society for 1792. In the Vol. for 1889, pp. xxxviii *et seq.* we have a discussion between Professors Whitney and Hopkins on the date of the Laws of Manu.

#### JOURNAL ASIATIQUE.

The whole of the number for January 1890 is occupied with an article by M. Sabbathier on the Agnishtoma according to the Srauta Sutra of Asvalayana. The Agnishtoma or ritual of the praise of fire is described by Mr. Sabbathier as the simplest form of the Soma sacrifice. It is gratifying to find that he has been assisted in his labours by our Bibliotheca Indica edition of Asvalayana's text with the commentary of Gargya Narayan.

The February number contains one of M. Senart's interesting contributions to Indian Epigraphy. He describes there three inscriptions belonging to the Museum of Lahore. All three have dates, and in one the name of Kanishka appears. In the same article we have descriptions of the statues of Sikri. M. Senart discusses the question of Greek influence on Indian sculpture and his remarks may be compared with those of Mr. Vincent Smith already referred to. M. Senart's article is admirably illustrated, and I note that the illustrations are placed in the article and not at the end of the number as is our somewhat inconvenient practice. The same number contains a highly interesting article by M. James Darmsteter called the Great Inscription of Kandahar. This inscription is in a rock-cut chamber at old Kandahar. M. Darmsteter shows that there are really three inscriptions, one recording Babar's capture of Kandahar on 6th September 1522, and apparently put up in Babar's lifetime by his son Kamran, another by 'Askari a younger son of Babar, and thirdly an inscription put up some seventy

years later (circa 1598) in the reign of Akbar by Mir Masum Nami the author of a history of Scinde. This inscription gives a curious list of the territories subject to Akbar. It says that his dominions extend from Sarandib (Ceylon) Orissa, Bandgoraghat (Ghoraghat) Gaur and Bangala to Tatta, Bandar-Lahore and Ormuz, a nearly two years' journey. Then follows a bead-roll of towns and districts, which contains among other names those of Satgaon, Chittagong, Burdwan, Sulaimanabad, Sherpur Mircha, Purniah, Agmahal (Rajmahal) and Tajpur (?). One cannot help thinking how Mr. Blochmann would have enjoyed reading and commenting on this inscription. The mention of Bangala in it is interesting. This name appears also on the Astrolabe described on our Proceedings for April last, p. 649, and is apparently there used as the name of a town. The Astrolabe is of 1677, but the maker probably copied from some older instrument. Mir Masum was a well-known writer of inscriptions, and is the author of the famous one at Fatehpur Sikri in which an alleged saying of Jesus Christ is quoted (A. S. B. Proc. 1874, p. 174). M. Darmsteter had previously published in 1888 (J, A. XI, 491) ten inscriptions from Babar's tomb at Kabul. Among them is one in memory of Akbar's first wife and cousin Ruquya Sultan Begum the daughter of Hindal. It is perhaps to be regretted that these interesting inscriptions were not published in an English journal, but at all events Mr. Darmsteter obtained them from English officers. He also has candidly pointed out that the Kandahar inscription was published many years ago in Calcutta, though in an imperfect form, by Mohan Lal the munshi of Sir Alexandar Burnes. The *Journal Asiatique* for December 1889 contains a beautifully expressed eulogium by Renan on Pavet de Courteille the translator of Babar's *Memoirs* from the Turkish, and the February number of 1890 contains the best tribute that I have seen to the memory of our distinguished countryman Sir Henry Yule. It is by M. Henri Cordier.

Since the above was written, the July-August No. for 1890 has been received. It contains the financial statement for 1889, and the annual report by M. Darmsteter. It is interesting to see that the French Asiatic Society has also difficulties in collecting subscriptions. Three-fifths of the members, we are told, pay regularly. I note too that part of the funds of the Society is invested in railway shares. As we are not a Government institution and are not bound by our rules to invest only in Government securities I think that we might follow this example, and invest in joint stock Companies, if thereby we could get higher interest, without serious danger of losing our capital.

M. Darmsteter's report is very interesting. It is a triennial



one, and notices everything that has been down for Oriental studies in France during the years 1888-89, and part of 1890. He calls attention to a very interesting note by M. Sylvain Lévi on India in the time of Alexander the Great (*Journal Asiatique*, 1890, I. 234—240). M. Lévi shows that the name of Omphis which was the title of Taxilus before he came to the throne is probably the same as Ambhi which occurs in the Ganapátha which is an appendix to Panini's grammar. He draws the inference that Panini's grammar was probably composed at the time of the Macedonian invasion. Mr. Lévi also identifies the Tiberoboam of the Pseudo Callisthenes with the Tabranala, and thereby strengthens Sir Alexander Cunningham's identification of the capital of Taxilus. A young Japanese scholar, Mr. Ryauon Fujishima, has published part of the work of a Chinese pilgrim, I-tsing who left China for India in 671, twenty-five years after Hiouen-thsang, and spent twenty years in India and sent from there to China a book in four volumes called the history of the inner law. It seems that this work contains valuable information about Indian Buddhism &c., and it is to be hoped that it will soon be fully edited and published. M. Vinson has published extracts from the *Journal of Anandavangappoullé* a dependant of the French East India Company. Among other interesting matter they contain conversations with Dupleix. M. Darmsteter has published last year a valuable work on Afghanistan called *Chants populaires des Afghans*.

#### JOURNAL OF THE GERMAN ORIENTAL SOCIETY.

Parts I and II for 1889 contain articles by Bühler on the Asoka inscriptions, and Part II for 1890 contains an article by Prof. Jolly on the history of Indian law which would surely have delighted Sir William Jones. Part II for 1889 contains a short article by Dr. Böhtlingk on the question of the authorship of the *Hitopadesa*. Prof. Peterson has on the strength of three MSS. declared that the author is one Narayan, but Dr. Böhtlingk thinks the evidence insufficient. There is also a learned article by Joseph Zubaty on the formation of the *Tristubh* and *Jagati* metres in the *Mahabharat*. Our former Secretary, Dr. Sprenger reviews Alberuni's *India*. In Part III for 1890, he has some remarks on Dr. Glaser's history of pre-Mohammedan Arabia and on the meaning of the word *Ophir*. It is sad to find that the veteran is suffering from weakness of eyes. There is also an interesting note by Dr. Böhtlingk on the question if the practice of exposing female infants prevailed in ancient India. He answers this in the negative and decides that the text quoted in favour of the view does not support it.



The Vienna Oriental Journal for 1889 contains a note by Mr. Hewitt a Bengal civilian on one of the countries visited by Hiouen-Tsang.

Vol. 4, No. 4, for 1890 contains a continuation of Prof. Bühler's interesting articles on the authenticity of the Jaina Tradition. He notices the new inscriptions found by Dr. Fuhrer in excavating the Kankali Tīla at Muttra. It appears that this mound covered a Buddhist stupa and two Jain temples. Prof. Bühler mentions that two papers on the Muttra inscriptions will appear in Part VII of the *Epigraphia Indica*.

#### OUR JOURNAL PART II.\*

The second part of the Journal for the year 1890 contains some papers of importance, though in consequence of the financial straits of the Society it has been found impossible to give so many plates as usual.

The first paper is one by Mr. Eliot and is devoted to explaining the curious inversion of temperature that occasionally takes place between the hills and plains of Northern India; this is due to various factors such as the absence or presence of cloud, the absence or presence of wind and the low snow line.

Among the Zoological papers is a very interesting one by Dr. A. Alcock, Surgeon Naturalist of the Marine Survey, on the Gestation of some Sharks and Rays (noticed below). Another one by Dr. G. M. Giles, Dr. Alcock's predecessor, gives descriptions of seven new species of Amphipods dredged off the Andamans and the Madras coasts; this paper is illustrated with a plate containing outline drawings of the various new species by the author of the paper.

Dr. T. H. Tull Walsh describes a new trap door spider (*Adelonychia nigrostriata*) from Orissa. The spider with its tube was dug up by the author under a banyan tree in a forest near Khurda, and as it lived for some time Dr. Walsh was able to observe and give some account of its habits.

Other papers dealing with insects are by M. Desbrochers des Loges on new *Curculionidae* and *Brathidae*, by Mr. F. Moore on some Indian *Psychidae*; by M. Bigot on a new species of Dipteron, and Lieut. E. Y. Watson's preliminary list of the Butterflies of Madras.

The botanical papers in the Journal are more numerous than usual this year. Dr. Barclay concludes his paper on the *Urediniae* found near Simla; this paper is illustrated with four plates. Dr. G. King continues his Materials for a Flora of the Malayan peninsula, the present instalment

\* Kindly supplied by Mr. Selater.

deals with the Orders *Bixineae* *Pittosporae*, *Polygaleae*, *Portulacae*, *Hypericineae*, *Guttiferae* and *Ternstroemiaceae*.

Mr. Gamble of the Forest Department gives a description of a new genus and species of Bamboos got by Dr. Prain in the Naga hills at a height of 7,870 feet. Dr. Prain has contributed several papers, viz. 1. On a species of *Elliphanthus* from Diamond Island, Arakan. 2. On the non-indigenous species of the Andaman flora. This is an interesting paper dealing with all the cultivated plants and weeds which have been found in the Andaman Islands. Of the 151 non-indigenous plants found 37 were introduced intentionally and 114 were weeds and introduced by accident.

Besides these natural history papers there are in the present volume of the Journal three Mathematical papers by Asutosh Mukhopadhyay. "On Clebsch's transformation of the Hydrokinetic equations," "on Stokes' theorem and Hydrokinetic circulation" and "On a curve of Aberrancy."

Dr. L. A. Waddel has contributed a paper to the Journal on some new or little known hot springs in South Behar. Several of the springs here described are not mentioned in Mr. Oldham's Memoir on the subject published by the Geological Survey. A table is given showing the geographical and geological position of each spring with details of temperature, height above the sea, etc.

#### ZOOLOGY.\*

During the present year the most important event in Vertebrate Zoology is undoubtedly the publication of Mr. Boulenger's contribution to the handbooks of the Fauna of India. No general account of the Reptiles of India has been published since Mr. Theobald's Descriptive Catalogue published in 1876; since which time considerable additions have been made to the number of Reptiles known to inhabit the Indian Empire. The handbook is founded on the numerous catalogues of these forms which have been written by Mr. Boulenger during the last few years, with the exception of the Snakes, of which as yet no modern British Museum Catalogue has been issued. The account of this group has been specially prepared for the present work.

#### MAMMALS.

Very little work has been done this year in connection with Indian Mammals.

In the Proceedings of the Zoological Society three papers will be found dealing with this subject, one by Professor Sir George Mivart

\* Kindly supplied by Mr. Selater.

who recognizes only two species of the Genus *Cyon*, the wild dog of India, *Cyon alpinus* the Siberian form and *Cyon javanicus* the Indian and Malayan form; another by Mr. W. L. Selater gives a list of the Indian Rats and Mice with notes on their specific and generic characters, their synonymy and distribution. The paper was founded on the examination of specimens in the Indian Museum; the third is a note by Capt. Percy Armitage on two mounted heads of the Thanin or Munipur Deer (*Cervus eldi*) which he had shot in the Shwaygheen district of Burmah.

#### BIRDS.

As is usually the case, a good deal more has been done in Ornithology than in Mammalogy. Mr. Oates has published the second and third volumes of the revised edition of Hume's Nests and Eggs of Indian Birds, the first volume of which was published in 1889. This completes the work and the two volumes now issued contain portraits of the late Mr. E. Blyth, of Mr. Blandford, Col. Godwin-Austen, Major Wardlaw Ramsay, the late Marquis of Tweeddale, Mr. Brooks, Mr. Bowdler Sharpe, and Mr. Davison, nearly all of whom were members of this Society.

Count Salvadori has published in the Annals of the Civic Museum of Genoa, Second Series vol. VIII, a long account of a collection of birds made by Signor Fea, the collector of the Civic Museum, in Burma and the Karen hills. Among the latter are eight new species; and five more recorded from Burmah for the first time were obtained. It seems a pity that the Trustees of the Indian Museum have not yet been able to arrange some means of zoologically exploring the hill country of Burma, and that so many of the new discoveries not only in birds but in mammals and reptiles should have been made by foreigners.

Herr Ernst Hartert who has travelled about collecting in the Malay Peninsula, in Upper Assam, and in other parts of India, describes his journeys and collections in the Journal für Ornithologie for 1889 p. 345 and gives many interesting notes on the eggs and habits of the various birds he came across. In another short paper in the same Journal for 1890 (p. 154) he describes a new species of Babbler (*Crateropus larvatus*) from Madras.

Mr. George Reid has compiled a catalogue of the birds in the Lucknow Museum which will doubtless be found useful to ornithologists in the North-West Provinces. The collection consists of 5,360 specimens representing 783 species.

Mr. Sharpe (P. Z. S. 1890, p. 546), in continuation of his notes on the Hume collection of birds, has published an account of the *Coraciidae*



of the Indian region in which he describes a new species (*Eurystomus laetior*) from the forests of Malabar and the Nilgiris.

Mr. Beddard the Prosector of the Zoological Society of London (*Ibis*, 1890, p. 293) writes on the systematic position of an aberrant form of owl—(*Photodilus badius*). This owl the author considers should be removed from the family *Strigidae*, with which it is generally associated, to the family *Bubonidae*.

Major Wardlaw Ramsay (*Ibis*, 1890, p. 214) contributes a monograph on *Macropygia* a genus of doves of which several species occur in the Indian region.

Lieut. H. E. Barnes continues his "notes on nesting in western India" in the Journal of the Bombay Natural History Society, pp. 1 and 97 and gives plates of the nests of the Indian Tailor bird (*Orthotomus sutorius*) and of the White eye (*Zosterops palpebrosa*).

Mr. O. Grant, (*Ann. Mag. Nat. Hist.* vol. 6, p. 80) separates the Indian and Indo-Chinese form of pigmy rail from the western form; the latter retains the old name *Porzana bailloni* while the former will be known in future as *P. pusilla*.

#### REPTILES AND BATRACHIA.

Mr. Boulenger's handbook of the Indian Reptiles and Batrachia has already been mentioned. The only other paper of any interest published during the year on this subject is one by Mr. Vidal on the venomous snakes of the north Kanara, Journal of the Bombay N. H. Society, p. 64. In this paper it is shown that *Echis carinata* a poisonous snake is found in enormous quantities in the Ratnagiri district. In 1885 and 1886 the number of *Echis* destroyed for reward amounted to no less than 240,000 and 208,000 respectively while in the whole of the Indian Empire in these years only 420,000 and 427,000 snakes respectively were destroyed, so that at least half the snakes destroyed throughout British India for reward were *Echis* and were killed in the Ratnagiri district. The mortality from snake-bite is high in Ratnagiri, and is doubtless due to the *Echis* and not to the cobra which is very rare in the district.

#### FISHES.

The only naturalist who seems to have devoted much attention to Ichthyology during the last year is Dr. Alcock, the Surgeon Naturalist on board the H. M. S. Investigator. He has published three most important papers during the year, in the Annals and Magazine of Natural History, of which the first deals with the deep sea fishes collected by him in the Bay of Bengal during the season 1889-90 while with the Investigator. In five hauls all made off the Madras coast, considerably



over one thousand specimens were obtained, belonging to 24 species, of which nine are already known but rare, the other 15 appear to be new, and five new genera have had to be formed for reception of some of these new species. Perhaps the most remarkable of all the finds was a *Pediculate* showing close affinities to *Oneirodus* which is found only in the Greenland seas.

The second paper is on the deep sea fishes of the Arabian sea. These fishes were remarkable for their great size as compared with those of the Bay of Bengal. Nine new species and five new genera are described in this paper.

A third paper by Dr. Alcock contains descriptions of 14 new species of shore fish collected by him during 1889-90 dredging season on the coasts of the Bay of Bengal.

The last paper in the second part of the Journal for 1890, p. 51 gives a most interesting account of the gestation of certain species of *Elasmobranch* fishes in which he shows that in certain viviparous species there is a true placental attachment between the embryo and the mother. The placental cord which contains a vein and an artery ends in a spongy arborescent mass applied to the wall of the uterus which itself is full of spongy blood-vessels at that point.\*

#### ENTOMOLOGY.†

During the year 1890-91 there has been considerable activity in connection with the subject of Entomology. In the Journal of this Society, M. T. Desbrochers de Loges describes some new species of *Curculionidae* and *Brenthidae* from the Indian Museum; Mr. F. Moore gives descriptions of some Indian *Psychidae*; Mons. J. M. F. Bigot describes a new species of *Diptera* from the Indian Museum; Lient. E. Y. Watson gives a list of butterflies collected in Madras; Surgeon J. H. T. Walsh describes a new spider which he found, in its ingeniously constructed trapdoor nest, in Orissa. In Supplements to the Journal have appeared synonymic Catalogues, by the late Mr. E. T. Atkinson, of the oriental species of the *Coleopterous* family *Carabidae*, while similar Catalogues, by the same author, of the *Dytiscidae*, *Gyrinidae*, *Paussidae*,

\* I may note here that we have received as a Christmas present from our Centenary member Dr. Haeckel a copy of his *Plankton Studien* which is an essay on Marine Flora and Fauna. In a dedication to Dr. John Murray he congratulates him on having brought to a close the 82 Zoological Reports which occupy 32 quartos and 2,600 plates of the "Voyage of H. M. S. Challenger," and says that this epoch-making work is the largest and most important contribution that has been made to marine biology.

† Kindly supplied by Mr. Cotes.

*Hydrophilidae*, *Silphidae*, *Corylophidae*, *Scydmaenidae*, *Pselaphidae*, and *Staphylinidae*, also a Catalogue of Oriental *Orthoptera* by M. Pictet, are in course of being printed. These Catalogues form part of a useful series, the publication of which was undertaken by the Asiatic Society in conjunction with the Trustees of the Indian Museum, the idea being to gradually extend them to all the numerous groups of insects found within the limits of the Oriental region, as men could be found who should be competent and willing to take up the different groups. Such Catalogues are much wanted to facilitate the study of groups like the *Diptera*, the *Orthoptera*, the *Neuroptera*, the *Hymenoptera*, and the *Hemiptera*, the literature of which is at present in a very confused state; it is to be hoped therefore that the work of publication, which has had to be temporally suspended on account of financial pressure, will be resumed when the finances admit. In the Proceedings of this Society, Mr. Bigot describes a new dipterous insect from the Indian Museum; Mr. de Nicéville gives a note on the *pupae* of two butterflies of the subfamily *Nemeobiinae*; M. Lethierry describes a new *Psyllid*, said to be attended by ants of the genus *Camponotus*.

The Trustees of the Indian Museum have published an elaborate monograph in three parts, by Mr. W. L. Distant, on the subject of the *Cicadidae* of the Oriental Region; figures being given in illustration of all the species with a view to facilitating their identification.

Mr. H. Z. Darrah has published a paper on the cultivation of the *eri* silkworm in Assam, where a series of experiments have been carried on under the direction of the Department of Land Records and Agriculture. The object of the experiments, which were upon a considerable scale, was to ascertain the extent to which the *eri* silkworm could be profitably cultivated in Assam; but *Flacherie* broke out amongst the worms, also the crop of castor-oil leaves, upon which they were to be fed, was largely destroyed by caterpillars, and upon the whole the experiments seem to have shown pretty clearly, that though the industry may occasionally be profitable, especially when conducted upon a small scale in isolated spots, it is of too precarious a nature to make it worth while to invest any considerable amount of capital in it.

Mr. F. Moore has issued three parts of the extensive work he has undertaken on the *Lepidoptera* of India: these deal with the butterflies of the family *Euplaeinae*, and are illustrated by numerous coloured plates, in many cases containing figures of the larval and pupal stages, which have hitherto been unduly neglected in works of the kind.

In the Transactions of the Entomological Society of London, Colonel Swinhoe gives a list of 662 species of *Lepidoptera* from Burma, no less than 107 of them being described as new: Mr. de Nicéville de-

scribes a new genus of *Lycaenidae* from the N. W. Himalayas: Mr. H. J. Elwes describes a new species of moth belonging to the curious genus *Himantopterus*, from the Naga hills; Dr. D. Sharp describes some new aquatic *Coleoptera* from Ceylon, and in a paper on the terminal segment in *Hemiptera* deals with the external genital armature of several Indian species; Mr. Neville Manders gives a list of butterflies collected in the Shan states, while the Rev. H. S. Gorham gives a series of notes on the *Lycidae* and *Lampyridae* of the Indian Museum collection.

In the Transactions of the Zoological Society there is a general revision, by Mr. Kirby, of the *Orthopterous* sub-family *Libellulinae* from all parts of the world, including an account of the various species and genera to be found in India.

In the Comptes Rendus de la Société Entomologique de Belgique, Mons. E. Candèze gives a note on a collection of *Elateridae* from Chota Nagpur.

In the Proceedings of the Manchester Literary and Philosophical Society, Mr. Cameron continues his general catalogue of oriental *Hymenoptera*.

Some papers on the *Coleoptera* collected by the late Dr. Stoliczka during the mission to Yarkand in 1873-5 are being printed by order of Government; they comprise descriptions of new species by Messrs. Baly, Janson, H. W. Bates, and F. Bates, and complete the series of entomological papers which have been appearing at long intervals since the date of the mission.

In the Proceedings of the Zoological Society of London, Mr. H. J. Elwes describes and figures a number of new Indian moths.

In the Journal of the Bombay Natural History Society, Mr. J. A. Betham gives a note on the butterflies of the Central Provinces; Mr. E. Y. Watson gives a list of the butterflies of Mysore; Mr. de Nicèville describes various new butterflies from different parts of India, and gives a list of the Chin Lushai species; Major C. T. Bingham gives notes on Oriental *Hymenoptera*; Messrs. Davidson and Aitken give notes on the transformations of some Bombay butterflies; while papers by Messrs. Cotes and Rothney, on Indian Locusts and Indian Ants respecting, are reprinted from other publications.

In the Annals and Magazine of natural history, Mr. C. J. Gahan describes some new *Longicornia* from India and Ceylon; Mr. W. L. Distant describes two new genera of *Cicadidae* founded upon new species obtained in Burma and Assam: Colonel Swinhoe describes some new Indian butterflies; Mr. Wood-Mason describes two new genera of *Mantidae* founded upon new species from Singapore and Perak; he also gives a note on a viviparous caddisfly found in Calcutta.



In the Indian Museum the chief work of the Entomological Section during the year has been the investigation of the history of the locust, *Acridium peregrinum*, which has overrun almost the whole of India during the past two years, stray flights penetrating into Bombay, Madras, the Central Provinces, Bengal, and Assam, and vaster hordes committing depredations over the whole of Sind, Rajputana, the Punjab, the North-West Provinces and Oudh. In the dry sand-hills of Rajputana this locust has been found to breed once in the commencement of the south-west monsoon rains, and a second time in the latter part of the rainy season, while in the north-western districts of the Punjab it breeds once at the close of the winter rains and a second time in the middle of the rainy season. The eggs are deposited in the ground and the injury to the crops is done, in the first instance, by the swarms of wingless larvae which emerge from the eggs, and afterwards by the winged flights of mature insects into which the wingless larvae develope. These winged flights penetrate into all parts of India, occasionally alighting to devour standing crops, and then passing on to commit their depredations elsewhere. Energetic measures have been taken by the district officials wherever eggs have been laid, and the cultivators have been encouraged, both to collect the eggs, and also to destroy the helpless larvae before they acquire their wings: the result being that no very extensive ravages have occurred in British districts, though in sparsely inhabited areas, such as those of western Rajputana, much damage has been done. Fortunately the flights, which have penetrated from the deserts of their homes in Rajputana and the Suliman Range, into the damper regions of Central, Eastern, and Southern India, have been unable to make headway against the birds and the unsuitable climatic conditions with which they have had to contend, and have invariably died off without depositing eggs, while the energy with which they have been driven off the crops by the cultivators in the villages where they have alighted, has materially reduced the amount of damage they have been able to occasion, though individual owners have in many cases suffered severely. Besides the investigation connected with the locust invasion, the collection of information on the subject of Indian Entomology in general and of Economic Entomology in particular, has gone on as usual, progress being also made in the matter of building up the reference collections which are necessary for the purpose. Parts III and IV of the periodical *Indian Museum Notes*, which are issued by the Trustees of the Museum under the authority of the Government of India, have been published during the year. Part III contains a detailed account by Mr. E. C. Cotes of what is known of the silk insects cultivated in India; while part IV contains notes on injuri-



ous *Rhynchota* by the late Mr. E. T. Atkinson, also on a new dipterous insect which attacks the Bengal silkworm fly, by M. J. M. F. Bigot, and on a butterfly destructive to various fruits by Mr. de Nicèville, besides numerous miscellaneous notes by Mr. E. C. Cotes on the insects submitted by district officers and others interested in agriculture, in connection with the investigation which has been undertaken by the Indian Museum.

#### BOTANY.\*

As regards Indian Botany, among the chief events of the year has been the publication, in the Journal of the Linnæan Society of London, of an elaborate paper by General H. Collett, C. B. and Mr. W. B. Hemsley, F. R. S., on the collections made by the former while in command of a column of troops in the Shan Hills and in Upper Burma. The paper contains descriptions of many new plants, some of which are of great interest. Amongst the novelties is a rose with larger flowers than any hitherto discovered species. Some excellent figures illustrate the paper. General Collett is one of the few British soldiers who work actively at botanical science. A paper† in the Transactions of the Edinburgh Botanical Society on the Economic Botany of Afghanistan and Persia has been published in London by Brigade Surgeon J. T. Aitchison, C. I. E. Dr. Aitchison accompanied several of our recent military expeditions into the latter country, and still more lately went with the more peaceful boundary commission. The more purely botanical results of Dr. Aitchison's labours were published some years ago, and this complementary volume now completes his contributions to our knowledge of the Botany of these interesting regions. The second volume of the Annals of the Botanic Garden, Calcutta, appeared during the year. The volume is in 4to. and contains 104 plates. It is devoted to the Indo-Malayan species of *Artocarpus*, and to the oaks and chestnuts of the same region. Its author is Dr. G. King. Several interesting botanical contributions have been given to the world during the year in the pages of the Society's own Journal. Amongst these are two by Dr. Prain of the Calcutta Herbarium. One of these is a most interesting paper on the non-indigenous species of the Andaman Flora. Up to a comparatively recent date these islands were absolutely virgin forest with a vegetation unpolluted by the plants used by civilized men and by the weeds which follow their footsteps. The object of Dr. Prain's paper is to show in what order these new introductions have arrived, and the extent to which they

\* Kindly supplied by Dr. George King, C. I. E.

† See *Nature*, No. 1104 (Vol. XLIII), p. 174.

have spread in the settlement at Port Blair. Dr. Prain's second paper describes a new species found on the little frequented Diamond Island. Dr. A. Barclay has published a third part of his valuable descriptive list of the Uredinous Fungi of Simla and its neighbourhood; while Mr. J. S. Gamble has described a new genus of bamboo. Finally, a second part of Dr. King's Materials for a Flora of the British Malayan provinces has appeared in its pages.

#### GEOLOGY.\*

Geological investigation in India during the past year has been continued on the lines of economic mineral research, especially with regard to the occurrences of coal and oil on the North-West frontier, and in Burma, and with fair and promising success.

Mr. Oldham has extended the area of coal occurrence in the Bolan valley and in the hilly tract of Zarukhu to the east and north-east of Quetta. His oil exploration has resulted in the demarcation of a tract for hopeful, though deep, boring in the Harnai valley in the neighbourhood of Spintangi; and during a *reconnaissance* with the Zhob Valley Expedition, a visit was made to the oil occurrence near Mogul Kot in the Sherani country.

The demarcation of oil areas in Burma has been carried out by Dr. Noetling, and he has considerably extended the area of the coal fields in the Shan Hills. The tin exploitation under Mr. Hughes, in Tenasserim, is beginning to give better returns: while some excellent ground has been met with lately. Mr. P. N. Bose's exhaustive report on the coal in the Darjiling district, between the Lissu and Ramthi rivers has brought this tract into quite a new and promising light. The seams are numerous, some of them being over 20 feet in thickness, though there is the usual faulted condition of the Himalayan foot-hills, and corresponding crush and breakage of coal. He estimates that about five and a half million tons are easily available.

Pure geological work has been kept in hand as far as was compatible with economic exploration. Perhaps the most interesting feature was the discovery by Dr. Noetling of lower silurian fossils in a series of limestones about twenty-four miles east of Mandalay. He collected and determined two species of *Crinoidarum*, a gigantic *Echinospærites*, and an *Orthoceras* which, as he writes, "however few in number and fragmentary they are, prove certainly the lower silurian age of the red greenish-grey coloured limestone. The presence of such a characteristic form as an *Echinospærites* even permits the identification of the exact horizon of the red limestone: it is an equivalent of the *Echinospærites*

\* Kindly furnished by Dr. William King.

limestone of the Baltic provinces. It not only contains the same fossils but also strongly resembles the latter lithologically. How can we account for such a strange phenomenon as this? We find here a fauna under  $22^{\circ}$  northern latitude which is precisely the same as found in the Baltic provinces ( $59^{\circ}$  to  $60^{\circ}$  N. Lat.), whilst the silurian fauna of the Himalayas approach much closer to the silurians of Central Europe. The fauna of the lower silurians of the Himalayas are as different to those of the Shan hills as are the silurian fauna of Bohemia to those of England. It must therefore be assumed that a branch of the Arctic province of the ocean by which the lower silurian beds were deposited reached at least to  $22^{\circ}$  N. Lat. of the Indo-Chinese peninsula; it is even likely that it extended still further to the south, as the limestone beds of the Shan hills are again met with in Tenasserim."

Mr. C. S. Middlemiss' Memoir on the *Physical Geology of the Sub-Himalaya of Garhwál and Kumaun*, which was issued by the Geological Survey in the middle of the year, has been received among geologists at home and in Europe as a most welcome and able contribution to Himalayan geology. His late survey of a part of the Salt Range in the Punjab has resulted in a more accurate interpretation of the very complicated stratigraphical relations of the palæozoic series as developed in that region. A main object was the following out of the famous Boulder Bed through its many appearances, keeping its relation to the Olive series, Conularia Bed, and speckled sandstone in full view as much as possible. More important, however, was the gathering of data concerning the positions and habit of the Salt Marl with reference to the contiguous formations. His views on all these points, some of which will probably necessitate some modification of the conclusions of Mr. Wynne and Dr. Waagen, who have all along been the great expounders of Salt Range geology and palæontology, are being published in the current number of the Records of the Survey.

Mr. Oldham, while at the coal and oil of Baluchistan, has very materially advanced the geological traverse surveys of Mr. C. L. Griesbach and Dr. W. T. Blanford, as given in their memoirs on "Southern Afghanistan" (Memoirs of the Geological Survey of India, Vol. XVIII, Pt. I, 1881) and "Geological Notes on the Hills in the neighbourhood of the Sind and Punjab Frontier between Quetta and Dera Ghazi Khan" (XX, Part 2, 1883).

Prof. Martin Duncan, in connection with the collections of the late Dr. Stoliczka obtained during the Yarkand Mission, has described some new species of *Syringosphæridæ* in a paper contributed to the Records of the Survey: and notes were also published by Mr. R. Lydekker on the pectoral and pelvic girdles and skulls of the Indian

Dieynodonts; on certain vertebrate remains from the Nagpur District; and on some fossil Indian bird bones.

A second part of the Provisional Index of the local distribution of important minerals, &c., of the Indian Empire, was issued by the Survey towards the close of the year. It treats of Madras and the North-West Provinces.

Dr. Johannes Walther, of Jena, published two interesting papers (*Verhandl. d. Gesellschaft für Erdkunde zu Berlin*, and *Zeitschrift. d. Deutsch. Geol. Gesellschaft. Jahr. 1889*) on *A Journey through India in the winter of 1888-89*, and *On Veins of Graphite in decomposed Gneiss (Laterite) in Ceylon*, translations of which, by Mr. R. B. Foote, appeared in the Records of the Survey. These papers are interesting as being contributions by a non-official geologist, and as testing the previous observations of the Indian Survey.

#### ASTRONOMICAL NOTES.\*

1. Prof. Janssen of the Meudon Observatory, made some observations on Mont-Blanc, probably demonstrating the absence of oxygen in the solar atmosphere..

2. About 13 new small planets were discovered, raising the total number to 300.

3. Proof was obtained by spectrum analysis of the existence of some double stars which even the most powerful instruments could not separate.

4. A new Observatory was built in the Vatican.

5. Schiaparelli proved the rotation of Mercury on its axis to be synchronous with its revolution round the sun, and that probably the same is true of Venus.

6. The arrangements for the production of a photographic Chart of the stars, on a uniform scale, were completed and in about three years the work will have been accomplished.

7. The successful observation of the annular eclipse of the sun at Bhagulpore on 17th June, 1890, by the St Xavier's College observers, resulting in a beautiful series of photos of the successive phases of the phenomenon, deserves mention.

#### CHEMISTRY.†

During 1890, the original chemical investigations carried out in India and published during the year have been only few in number. Messrs. Dymock, Hooper and Warden have continued their investigations on Indian indigenous drugs and the results have been in most cases incorporated in the "*Pharmacographia Indica*" published during the year.

Three papers have also been published in the Journal of the Chemical Society by Mr. Pedler on the subjects of the action of light on phos-

\* Kindly supplied by Father Lafont, C. I. E.

† Kindly supplied by Mr. Pedler.



phorus and on some of the properties of amorphous phosphorus; on the action of chlorine on water in the light and the action of light on certain chlorine acids and on the explosion of sulphuretted hydrogen and the vapour of carbon bisulphide with air and oxygen. The results of these papers have been mainly of technical interest.

#### GEOGRAPHY AND SURVEYS.\*

The geographical record of the year 1889-90 in India may be considered a remarkably good one, no less than 97,442 square miles of new country on our N. E. and N. W. borders having been brought under survey, besides the ordinary topographical and revenue surveys and other operations connected with the Survey of India under Col. Thuillier, R. E.

#### *Geographical Explorations and Surveys.*

*Chin and Lushai Hills.* Two expeditions took place during the season 1889-90 to the Chin and Lushai Hills, one starting from Kan, in the Myittha Valley, and proceeding into the Chin hills, and the other starting from Chittagong and proceeding into the Lushai hills. Each expedition was accompanied by a small survey party under Lieuts. Renny-Tailyour and Bythell, R. E., respectively. The operations in the Chin hills resulted in the survey of about 3000 square miles, and those in the Lushai hills of about 6000 square miles of previously unknown country. The series of triangles carried on by the two parties were successfully connected in the neighbourhood of Haka.

*Upper Burma.* The *reconnaissance* survey of Upper Burma has been continued during the past year by two parties instead of one, under Major Hobday, S. C. and Captain Jackson, R. E., the operations of both parties being similar to those carried on during the past four seasons. The following areas give the results of the past season's surveys:—

|                                                | Sq. miles.         |
|------------------------------------------------|--------------------|
| Myingyan and Meiktila districts ...            | 3,789              |
| Lower Chindwin district ...                    | 3,320              |
| Northern Shan States ...                       | 3,050              |
| Bhamo and Katha districts and Momeit State ... | 2,900              |
| Shwebo and Sagaing districts ...               | 2,210              |
| Pakokku district ...                           | 1,212              |
| Mandalay district and Thibaw State ...         | 980                |
| Chinbok Country ...                            | 800                |
| Baw State ...                                  | 301                |
|                                                | <hr/> 18,562 <hr/> |

\* Kindly supplied by Colonel Thuillier, R. E.

*Anglo-Siamese Boundary.* The Survey party under Captain Jackson, R. E., which accompanied the Anglo-Siamese Boundary Commission, succeeded in mapping an area of 9,020 square miles on the scale of 1 inch=4 miles. Mr. Ogle who was a member of the Survey party was detached at the outset to work independently, with instructions to survey the four States of Möng Ton, Möng Hang, Möng Chut and Möng Ta. This he successfully completed.

*Baluchistan.* Geographical Surveys on the  $\frac{1}{4}$ -inch scale were carried on in the Zhob Valley, in western Mekran and on the Perso-Baluch Frontier by the party under Col. Holdich, R. E., the area surveyed in detail amounting to 35,260 square miles.

*Persia.* Assistant Surveyor Yusuf Sharif, Khan Bahadur, who had been deputed to accompany Colonel Sartorius, C. B. on intelligence duty in Persia during the summer of 1889, returned to India in October 1890, after having surveyed about 25,000 square miles of topography on the  $\frac{1}{8}$  inch scale.

#### *Trigonometrical Surveys.*

The series of principal triangulation commenced in 1888-89 in Burma, was continued during the past season and carried northward for about 50 miles along the meridian  $96^{\circ}30'$ . Six new principal stations were fixed and two were selected in advance. The operations on the coast for fixing beacons for the Marine department were also continued by the same party; this work was carried for a distance of about 170 miles, in which 35 beacons were fixed.

*Tidal and Levelling operations.* The recording of the tidal curves by means of self-registering tide-gauges, their reduction and publication of predicted heights have been continued at 17 stations on the coasts of India, Burma and Ceylon. The observatories at Colombo and Galle, having completed their registrations, were dismantled, and the sites of three new observatories at Trincomali, Diamond Island and Minicoy Island were selected. In addition to these, it has been decided to start observatories at Jashk and Bushire.

Spirit levelling operations were carried on during the year from Hyderabad (Deccan) to Bezwada and from Nawanár near the head of the Gulf of Kutch to a little north of Tatta in Sindh.

*Longitude operations.* The operations for the electro-telegraphic determination of arcs of longitude were resumed during the past season in the Punjab, Baluchistan and Central India. Seven arcs were measured, including the revision of one formerly measured in Baluchistan and the measurement of a cross-arc—Agra-Kurachi.

*Solar Photography.* Photographs have been taken throughout the year at the Trigonometrical Branch Office, Dehra Dun, on all days that the sun was visible, in the same way as in former years.

During the year the Trigonometrical Branch Office has been actively engaged in passing through the press the volumes of the accounts of the operations of the Great Trigonometrical Survey. Vol. XI, on Astronomical Latitudes, has been completed and issued to all the principal scientific societies of the world. Vols. XII and XIII containing the reductions of the Principal Triangulation of the Southern Trigon, have just been issued. Vol. XIV containing the S. W. Quadrilateral, is nearly through the press. This volume completes the series devoted to the final reduction of the principal triangulation of India west of meridian  $92^{\circ}$ . There are in progress a volume of electro-telegraphic operations, and one on tidal operations.

#### *Topographical Surveys.*

In addition to the *reconnaissance* surveys described above, topographical operations have been continued in Baluchistan, the Himalayas, in Gujrat, and the South Mahratta country. Forest Surveys were carried on in Hoshungabad, Central Provinces; in the N. Canara, Dharwar, Poona, Ahmadnagar, Colaba and Tanna districts, Bombay Presidency; in Salem, Madura, and Tinnevely, Madras Presidency; and in Prome, Tounghoo and Thayetmyo, Burma.

#### *Cadastral Surveys.*

Cadastral Survey operations have been continued in Chittagong, Julpaiguri, Orissa, the Bardwan khas mehals and in various Wards' estates in Bengal; in Jhansi, the Terai, Kumaon, the Bhabar and in the Rampur State, N.-W. Provinces; in Nowgong and Sibsagar, Assam and in the Thongwa and Kyauksee districts,, Burma. New surveys were instituted in Bakarganj and Tipperah, Bengal, and in Gharwal, N.-W. Provinces. Traverse surveys were executed by three parties in various districts in the Central Provinces, N.-W. Provinces, and Burma.

#### *Publishing offices.*

The introduction of steam printing machinery into the photographic and lithographic printing office of the Survey of India has resulted in a very large increase in printed maps and other work reproduced by lithography or photo-zincography. The heliogravure process continues to make good progress and several plates illustrating our Journal serve to show the value of the method. The only new process to record is the method of making positive transparencies direct in the camera on dry plates, with very short exposures, by the addition of thio-carbamides in very small quantity to the eikonogen developer. This was discovered by Col. Waterhouse and described by him in the *Proceedings* for August, and seems likely to be of value, though not yet completely worked out.

## TRANS-FRONTIER AND OTHER GEOGRAPHICAL EXPLORATIONS.\*

Although no new geographical exploring expeditions of any importance appear to have been started during 1890, accounts of a great deal of very valuable new work have been received from all the parties that were out in Central Asia and Tibet. The most interesting of all is the adventurous journey in mid-winter of M. Bonvalot and Prince Henry of Orleans from Russian Turkestan across Tibet towards Lhasa and thence into China and through Yunnan to Tonquin. On our own eastern borders a great deal of work has been done both in Upper Burma and with the Chin and Lushai expeditions to add to our previously scanty knowledge of the upper waters of the Irrawaddy, Salwin and the country in the neighbourhood of the Koladyne, partly in connection with the Survey of India and partly with military expeditions. Explorations have also been made in Baluchistan and the N.-W. Frontier. It may also be noted that for the first time an English lady has crossed the Pamirs and the Karakoram and passed from Russian Turkestan into India.

*French Possessions.*—Our French neighbours seem to be unceasing in their efforts to explore the upper waters of the great rivers debouching in Cochin China and Tonquin, with the object of obtaining control of the trade of Northern Siam, Yunnan and S.-W. China. The most important effort of the kind reported is the discovery by Messrs. Fontaine, Pelletier and Mougeot, in a journey up the Me-Kong river, that the Khong rapids are not impassable, as had always been supposed, and that this river is navigable up to the mouth of the Mun, so that it may thus be possible for steamers to go from Saigon to Luang Prabang by the Me-Kong. The fall of the stream in the navigable channel is only 1 : 1000, and most of the rocks are covered at the time of lowest water in February. A steamer can go from Khong to Bassak, which is an important commercial centre, in six hours and bring down to Saigon the river products which are collected at the capital of Laos and are now carried overland to Bangkok, reducing the time and expense of carriage about half. Two steamers have since been taken up by Lieut. Heurtel as far as the Khong rapids and he believes that a regular service could be established during the season when the river is full.

On the China side, M. Haas proposes to push as far as possible up the Yang-tze-Kiang beyond Sui-fu and make a geographical and commercial exploration of Szechuen, Satchien-Lu, Bathang and Lithang and also to unite Chung-king and Montze by caravans with the object of drawing trade to the latter point in the interests of the French.

M. Pavie, the well-known explorer of the country between Tonquin

\* Contributed by Col. J. Waterhouse.



and Northern Siam, has a second time gone over the route between the coast and the Upper Mekong. He went from Cho-ho, the terminus of the boat-route on the Black River, and arrived at Luang Prabang via Lai Chow and Dien-Bien Phu.

The geographical gain in this journey is the complete investigation of the Black River, the most important tributary of the Song-ka or Red River; the two parent streams are the Lu-ma and the Papien, which last is not, as was long supposed, an affluent of the Nam-hu, and consequently a tributary of the Mekong.

An account of M. Taupin's surveys in Laos, published, together with a very full description of Lower Laos and a map, in the Bulletin of the Society for Commercial Geography, Paris, is a very substantial contribution to our knowledge of that country.

*Upper Burmah.*—An attempt was made in May last from Bhamo to ascend the two branches of the Irrawaddy, concerning the length and course of which there is considerable difference of opinion. Captain Barwick, Mr. Shaw and Major Fenton went up as a steamer as far as the confluence, about 150 miles from Bhamo, of which the position was determined at 25°56' N. Lat. and 97°38' E. Long. Further attempts to ascend either of the branches, the Mak-Kha to the west and Meh-Kha to the east, were frustrated by rapids only a few miles from the confluence. Major Hobday is now making further explorations in this direction.

*N.-E. Frontier.*—As already stated, a great deal of new country in Upper Burma and N. E. India has been explored by officers of the Survey of India, but the details are not yet available.

The Annual Report of the Survey of India for 1888-89 contains a revised sketch map of the course of the Lower Sanpo, as replotted from native information obtained by Sub-Surveyor Rinzin Nimgyal at Sadiya. The river appears more straightened out and has a more generally south-easterly direction than before, and a good deal of the supposed drainage of the Zyul Chu is assigned to the Sanpo.

*Thibet and Eastern Turkestan.*—The most notable exploration in Thibet is that undertaken by M. Bonvalot and Prince Henry of Orleans in company with Father de Decken, who have, as they telegraphed from Chung King, traversed that country from North to South and from West to East. Very scanty details have yet appeared of their journey, but the full account should be one of the most interesting records ever penned of a journey in midwinter across those high desert wastes under the greatest difficulties and privations.

From Kurla the party followed Prjevalski's and Carey's routes and also a new one. Avoiding the marshy land about the banks of the

Tarim, they passed through a salt desert, with very sparse vegetation and near the river a few wretched villages of the Turko-Mongolian population who are extremely wild and live by the chase.

At Lob-Nor the population is mixed with Khotanli who have taught them the arts of sowing and grinding corn. Some of the party visited Kara-Kurchun or Kuchun, as the eastern part of Lob-Nor is named in the maps, the western being called Kara-Buran. Going eastwards they found no trace of a great lake but only beds of reeds and sand-dunes. The largest sheet of water is at Kara-Buran, and here also is the wretched village of Lob, a name given to it by passing caravans, but unknown to the natives. It may almost be said, therefore, that Lob-Nor has no existence in name or in fact.

From Charkalyk the expedition followed Carey's route and reached the foot of the Altyn Tagh, a lofty range of sandy mountains, which, in spite of warnings to the contrary, they crossed quite safely with their camels by two passes, the Kum Davan (Sandy Pass) and Tash Davan (Stony Pass), the latter being very difficult, and the party suffered much from mountain-sickness. They then found themselves on a high plateau at over 13,000 feet and followed Carey's route as far as the Amban Ashkan Pass, where it turns to the south-east towards Bogalik, which is frequented by gold seekers. From here they intended to go south but could not find the route. In front of the Pass they saw two men on camels who came from Lhasa, and so they followed their tracks, which led them to more numerous ones passing the lake "that does not freeze" and going towards the south. They followed this route for about three weeks, till the 31st December, and then marched by compass for about a month, keeping to the south and a little west rather than east. They then came to a route with many paths going S. S. E., and on the 16th February south of the Tengri Nor, about 30 or 40 miles from Lhasa, they met a Tibetan embassy. By that time they had only 1 horse and 8 camels, which they lost in a week, and two men had died, but they had travelled some 900 miles in a desert of mountains, nearly 700 of which were quite unexplored, without water and with only bad *argol* as fuel. After a 40 days' halt, they went to the east, with the help of the Tibetans, and covered another 900 miles of new route to Tsangka where they rejoined the high road from Bathang to Ta-Tsien-la. They arrived at Chong King, on the Yang-tse-kiang, on the 8th July and reached Hanoi on the 29th September by way of Yunnan. They plotted their route all the way as well as they could and took meteorological observations. They have made very large zoological, botanical and geological collections and obtained a few ethnological specimens. The full account of this splendid 'Walk through Asia' will be awaited with interest.

The *Bulletin de la Société de Géographie* contains an interesting paper on Thibet by the Abbé Desgodins, who was long stationed at Bathang.

As noted in last year's address, M. Grum Grjimaïlo's expedition has reported several errors in the maps of the northern slopes of the Tian Shan. The Kiityka Pass does not exist; the Mengete Pass leads from the basin of the Kash into that of the Shusta, whence the route turns not to the north, but to the south-east, joins the route coming from the winter pass of Ulan-usu, and then leads to the Keldyn Pass and on to the Jullus or Sullus. To the north of this route rises the magnificent knot of mountains called Doess Meghene Ora, over 19,700 feet, of which the highest peak is estimated at 21,500 feet, and in which lie the head waters of the rivers Khorgos, Ulan-usu (Gindsha-chô), Shusta, or Manas, Jullus, Kash and others. Along the route from Atschal to Urum-shi, the Tian Shan forms an inaccessible wall crowned with an unbroken line of snow. Gold is found deposited in nearly all the rivers, but not in sandy strata or quartz veins. The Tian Shan is uncommonly rich in verbrate animals, though poorer than the Pamir in birds and insects, on account of the want of contrast and sameness in form of the flora.

From Urum-shi they proposed to go along the northern slopes of the Bogdo-Ala to Gutschen, then across the mountains to Turfan and make a push forward over the Gobi Desert to Lob-Nor. They were unable to carry out this plan and had to turn back to Ju-ge-than and went from Pishan to Hami. The *Iswestia* of the Russian Geographical Society, for 1890, No. 4, contains a sketch of the whole route from Kuldja to Hami, with the excursion in new country towards Lob Nor. It is noticeable that high mountains were found in this direction in place of the sandy plain shown on the maps.

The principal Russian expedition under Col. Pievtzoff seems to have made a more thorough investigation of the country they are visiting than the other reconnoitring expeditions are doing. Large collections of plant and insects have been made. All the routes gone over have been plotted and the astronomical points determined, and it was proposed to erect a meteorological observatory at Nia where they passed the winter.

The *Proceedings* of the Royal Geographical Society contains a letter from Lieut. Roborovski giving a very full amount of the journey made from Nia, in October 1889, to reconnoitre the passes through the lofty range bounding the Tibetan plateau to the south-east of Nia, in the neighbourhood of the tomb of Mondjilik Khanum at the source of the river of the same name. The whole party left their winter quarters



at Nia on the 24th April, in order to make their way into Tibet by this pass. Lieut. Roborovski had previously undertaken a journey from Nia to Cherchend by the direct route on the edge of the desert instead of taking the parallel road by the mountains, he had formerly gone over with Prjevalski. The edge of the desert was marked by a broad belt of poplars. To the north stretching out towards the Tarim is a wide sandy waste. The road is crossed by five streams which come from the mountains and are lost in the sand a little to the north of the road. Roborovski followed the course of the river Cherchend upwards, and came on the watershed at the same point he had previously reached from the east with Prjevalski. The expedition is said to have commenced its return journey on the 30th October last.

Captain Gromchevski has continued the exploration noticed in last year's Address. From the Tagh-dum-bash Pamir he went along the valley of the Uprang to the banks of the Muz and Ruskem Darya. Crossing the Aghyl-Davan pass over the Karakoram Range he visited the sources of the Muz. This river which rises in the Mustagh glaciers and joins the Ruskem Darya not far from Chang-takai was hitherto unknown. He then explored the sources of the Tiznaf and proceeded eastwards to Shahidula on the Kara Kash, and reached the lofty, sandy tableland and the mountains separating the Kara Kash from the Yurang Kash. Having lost nearly all his horses from the extreme cold (from  $-22^{\circ}$  to  $-27^{\circ}$  F. on passes at 16,000 to 17,000 feet) in midwinter, and leaving part of his baggage, he returned to Shahidula and thence to Khotan, where he met M. Bogdanovitch, the geologist of Pievtzoff's expedition and went with him to Nia. During his journey he made a topographical survey of about 700 miles and determined the latitudes of several points in the valleys of the rivers he visited.

In May he left Polu by the valley of the Kuras, for N.-W. Tibet with the object of reaching Lhasa, and crossing the Kuen Lun Range by the Lubashi Pass, at an altitude of 17,500 feet, he reached the lake of Gugurtlik and found the high plateau covered with ice and snow but overcome by bad weather and cold and the impossibility of obtaining food from the Chinese, he was obliged to return to Kashgar, where he worked out a number of positions, and going over the Pamir by the Pass of Kizil-art and crossing the Taldyk Range into Turkestan he returned by way of Gulcha and Langar to Och, in Ferghana, last October and has gone back to Russia. His itinerary is about 4,350 miles and he has determined 73 points and 359 heights. His zoological and botanical collections comprise about 39,000 specimens, besides geological specimens and ethnological photographs. A map showing his route is given in the *Izvestia* of the Russian Geographical Society,



for 1890, part I. Captain Gromchevtski seems to be a most indefatigable and undaunted explorer, and the account of his explorations should be of great interest.

News has been received of the arrival of Captain Younghusband at Kashgar, whence he will continue his explorations of the northern slopes of the Himalayas in the spring.

M. Dauvergne, of Srinagar, made a second journey in the direction of the Pamirs, more for exploration than sport. He explored the Kuen Lun Mountains, where he met Col. Pievtzoff's expedition, then crossing the Zarafshan or Yarkand River, he explored Sang Mariam, Sarikol, Tash Turgan, Kara Chumkar, and the Tagh-dum-bash Pamir. Shortly afterwards he identified the sources of the Oxus issuing from three great glaciers of the Hindu Kush; then following the river, he visited the Khurd Pamir and thence Sarhadd (Wakkan), in Afghanistan, where he was nearly stopped, and had to escape over the Hindu Kush, which cost him an attack of ophthalmia. He came down the hitherto unexplored valley of Karambar and following the Yassin River arrived at Gilgit. The Karambar or Ishkaman Pass, by which he crossed the Hindu Kush, is an important one as being the shortest route between Wakkan, the little Pamir and Punnial, on the Kashmir Frontier. It lies to the east of the Baroghil and Darkot Passes. The principal new points he ascertained are that the Lung River is tributary to the Tashkurgan and not to the Zarafshan, and that the sources of the true Oxus or Amu Darya are situated near the Wakijid-Kul Pass (15,500 feet), where three enormous glaciers on its south-western slope supply this river with its parent stream. The Gaz Kul is not its source, but from Lake Gaz Kul flows the Aksu or Murghab River. The exploration forms a very interesting and valuable contribution to Central Asian orography.

A French Mission under MM. Albert Develay and G. Pissou has been appointed to make an exploration in Asia Minor, Persia and Afghanistan. They propose to explore the route from Herat to Kabul by the Hari Rud, through unknown tribes of Aimaks and Hazarahs.

In the Proceedings of the Royal Geographical Society is a very valuable paper by Col. M. S. Bell, R. E., V. C., on the Great Central Asian Trade route from Peking to Kashgaria, giving an abstract of his journey from Peking to Kashgar in 1887, illustrated with a map and of special interest in showing how the Russians are gradually absorbing the trade, with Central Asia and Western China.

There is also a paper by Sir Frederic Goldsmid on Lieut. Vaughan's journey in Eastern Persia.

## CONCLUSION.

I have now finished my Address, but before I sit down, I beg to congratulate the Society on the restoration of their Palladium—the statue of the Dharm Rajah. This was presented to our Society in 1865 by Colonel Hedayat Ali who procured it from Buxa Fort. For a while the statue was in the Economic Section of the Indian Museum, but now again stands in its rightful place on our staircase, and I hope that our new President will see that it be placed on a fitting pedestal. Pandit Hara Prasad Shastri examined the lower and inner part of the image to see if there was any inscription but only found some pieces of paper with one or two sacred words on them (Om Avidya Saha).

I beg leave to express my thanks and those of the Society to our Vice-Presidents, Col. Waterhouse, and Mr. Wood-Mason, and to our Secretaries, Dr. Hoernle, Messrs. Little, and Selater, Major Sadler, Dr. Solf, and Mr. Tawney and to our Treasurer Dr. W. King for their services. The main part of the literary and scientific work of the Society falls upon the Secretaries, and I can assure my friend Sir Alfred Croft that he need not fear to accept the post of President so long as he has such able Secretaries and so strong a Council as we now have. Dr. Hoernle has unfortunately been absent for the latter half of the year, and so we have temporarily lost the advantage of his varied learning, and his special skill in numismatics. Dr. Solf and Mr. Tawney, however, have done much to supply his place in this last respect. Dr. Hoernle will, I am glad to say, return to us next month. It is a delicate matter to praise a man, and I am sure that my friend Colonel Waterhouse would much rather that I left him alone, but still I think that I ought to make special mention of Colonel Waterhouse's services. He has been connected with our Society since 1865, and during that time he has been unwearied in working for us. He has been so long an office-bearer that he knows more of the history of the Society than any of the other gentlemen who now meet at the Council-board. Colonel Waterhouse is going home shortly, but I hope that he will be soon back again, for our Society can hardly get on without him.

Some people have been abusing our Society, and saying that it has fallen from its former high estate, but I think we need never despair of the future of the Asiatic Society so long as it has on its Council men like Colonel Waterhouse, Mr. Wood-Mason, Raja Rajendralala Mitra, Pandit Hara Prasad Shastri and Babus Pratap Chandra Ghose and Gaur Das Bysakh.

I have received useful help from our Assistant Secretary Mr. Ronaldson. He has been daily at his post from morn till dewy eve, and

has done good work. It was to a suggestion of Mr. Ronaldson that we owe our present exemption from Income Tax on our securities. Mr. Ronaldson is now about to retire, and I hope that he will spend the evening of his days happily and peacefully. I have also been fully satisfied with the industry of Mr. Elliot and of the members of our native establishment. We are, I think, especially fortunate in our Pandit, Babu Hari Mohan Vidyabhushan. He is a good Sanskrit scholar, and is engaged with Babu Sarat Chandra Das, C. I. E. in editing the Bodhisattvad-ankalpalata. An account of this work is given by Pandit Hara Prasad Shastri in the report on the Bengal Library for 1889.

I am deeply grateful to you, gentlemen, for the honour which you have conferred on me by electing me as your President. It has been a splendid coping-stone to my Indian career, a much finer one than I deserved. I shall always remember with pleasure my connection with the Asiatic Society. I have been but an unworthy member as regards work, but I have a great reverence for science and scholarship. I like the Society too, because it is a place where the European and the native can meet together in harmony, and where there is no room for the display of that bestial antipathy\* with which they sometimes plague one another. I always read with pleasure our Rule 3 which says "Persons of all nations shall be eligible as members of the Society." It reminds one of the inscription on our Founder's Monument.

"Who thought none below him but the base and unjust,  
None above him but the wise and virtuous."

It is a great satisfaction to me, and I believe to all of you that Sir Alfred Croft has agreed to become our President. What we specially want at this time for the Head of our Society is one who has administrative ability and tact, and we all know that Sir Alfred Croft possesses these qualities in an eminent degree. It is fitting too that we should have for our President the Director of that great Educational Department which, I am not afraid to say, contains a greater proportion of men of light and leading than any other Service in India.

H. BEVERIDGE.

\* I borrow this phrase from Austin who applies it to the dislike between the English and the Americans.



## NOTE I.

I find that I have omitted to notice three important Indian publications.

One is the *Bhaktiratnakar*, or Sea of Devotion by Pandit Ram Narayan Tarkaratna. This work is in fourteen parts and was completed in 1889. It is described by Pandit Hara Prasad Shastri in his report on the Bengal Library for that year. The Vaishnabs regard it as one of their standard books, and it is interesting to the general student on account of its giving a picture of Bengal 300 years ago. One Shrinivas carried the Sanskrit MSS. written by Rup, Sanatan and others of Chaitanya's immediate followers from Brindaban in Bengal. His adventures on the journey are described and how he made a disciple of the Bishenpore Raja. This Mission was nearly half a century previous to the Catholic Mission to Bakla (Bákarganj) and the founding of Bandel Church in Hooghly. Chronologically Chaitanya corresponds to Luther, and it is interesting to find that the 16th century was a time of religious ferment in India as well as in Europe.

A second work is the *Panchasiddhāntikā* of Varaha Mihira. This is an astronomical work and, as its name implies, it is a compendium of the five systems in vogue in Varaha Mihira's time. The work is edited by Prof. Thibaut and Mahāmahopādhyāya Sudhākara Dvivedī, and Prof. Thibaut also supplies a translation and an introduction. It is very meagrely noticed by the reporter for the N.-W. Provinces, but there is an appreciative notice of it by M. Barth in the *Revue Critique* of 17th November last. It will be remembered that Prof. Thibaut published a paper on the *Panchasiddhantika* in our Society's Journal for 1884. The present work has been published at Benares.

The third work is the *Butterflies of India, Burmah and Ceylon* by Mr. de Nicéville of which Vol. III has just appeared.

Among works which are about to appear I may mention an elaborate edition of Hafiz by Col. Willoughby Clark.

It is a matter for congratulation that the long-promised index to the *Tabaqát-Nasiri* is nearly ready. It is a pity that it could not have been prepared by the author Major Raverty.

Pandit Hara Prasad Sástrī gives the following notice of Indian publications received in 1890 :

"With the exception of Assam and Central India, the other Provinces of India have published Catalogues for two quarters of 1890. The Bengal Catalogues contain the names of 1,179 books among which may be mentioned the biography of the celebrated dacoit Tántia Bhil and the *Beshvanathi Ramayan* which attempts to prove that the *Ramayan* shows the spiritual side of Vedic society, while the *Mahabharat* shows the ritualistic side. The Bombay lists show a marked tendency in the Marhattas to study biography. The publication of the letters of Nana Farnavese shews that they prize the records of their great men of the past. The lists for the N.-W. Provinces contain a number of works on the Congress and on the cow-protection movement. In the Madras list we have the *Peria Purán* or the great legend in Tamil containing an account of the sixty-three special devotees of Shiva and the *Chúrdmantí* containing an account of a Buddhist king by a Buddhist author in Tamil. The Punjab lists contain several works giving an account of *Puran Bhakat* which appears to be very popular in the Province. They also mention the publications of Chapter I of the Koran with vernacular commentaries."



## NOTE II.

## TIBETAN LITERATURE.

"The first traveller in Tibet who acquired a mastery over the Tibetan language, was a Roman Catholic Missionary who compiled a Dictionary in Tibetan and Italian. His name has unfortunately been lost, but Rev.—Schreter obtained his MSS. which he translated into English. The work under the name of Bhotanta Dictionary was published by Carey at Serampore in 1826. Afterwards Csoma De Korös explored the field of Tibetan learning. He studied its classical and modern literature, though he never visited Tibet Proper or acquired a colloquial knowledge of its language. He compiled an excellent Dictionary of Tibetan after the method of Prof. H. H. Wilson. In 1882 the Secretary of State published another Tibetan Dictionary compiled by the late Rev. Jäschke of the Moravian Mission at Lahoul. Jäschke drew his materials chiefly from Csoma's Dictionary, though here and there he has borrowed words and expressions from the Serampore work. In fact Jäschke's Dictionary may be viewed as an edition of Csoma's Dictionary after Monier William's method, with that scientific finish without which no dictionary can be acceptable to scholars at the present day. But beyond this and the fact of its being handy and useful to philologists, it does not take the student one step further in the acquisition of Tibetan than Csoma's Dictionary.

In studying Tibetan since my return from Tibet in 1883 I have derived much help from Jäschke's Dictionary, but I must at the same time remark that in carrying one's study deeper into the classical as well as the modern literature of Tibet neither Csoma's nor Jäschke's work affords the necessary help. Here the student's way to scholarship is blocked by unseen obstacles which can be removed only by the erudite Lamas of Tibet, but such help is not easily obtainable. I keenly felt this difficulty in 1880 when I conceived the idea of collecting additional material for a Tibetan Dictionary in Tibet.

My residence in the Grand Lama's Library in Tibet afforded me ample opportunities for the realization of my hope of being able to explore the entire literature of Tibet with the help of the learned Lamas of Lhasa and Tashilampo, but unfortunately politics intervened and all my expectations vanished. The sacred works of Tibet are divided into two classes called the *Kahgyur* or the translation of the "word" of Buddha and the *Tangyur* or the translation of "epistles" of the Buddhist ministers and sages, the former consisting of 108 volumes and the latter of 225 volumes. It does not appear to me that a systematic endeavour to examine these works has ever been made by any orientalist with the exception of Csoma de Korös, who had the advantage of studying on the confines of Tibet under a scholarly Lama. Had it been possible to explore this vast literature with the help of the existing dictionaries, scholars like Wassilew, Foucoux Leon Feer, Manzel, Rockhill, surely would not have allowed our knowledge of the Tibetan literature to remain at a standstill. Without meaning to give offence to scholars who have already ventured to work in the field of scientific research, I must point out that the numerous erroneous renderings of Tibetan texts which they have unconsciously permitted to appear in their contributions owe their origin to the want of an exhaustive dictionary of the Tibetan language. Several sets of the *Kahgyur* and *Tangyur* exist in the great libraries of London, Paris, Berlin and St. Petersburg, in consequence of which it is not too much to say that the scholars of Europe have been in possession of sufficient materials to work with, but then to do so satisfac-

torily they require the help of a complete dictionary or a scholarly Lama. They have not the former, and it is not possible to have the latter. During the last two years with the help of Lama Sherah I have examined a large portion of the Kahgyur collection of 108 volumes contained in the Society's Library. With a view to obtain a set of the Tangyur collection of 225 volumes for the Society. I applied to the President the late Mr. Atkinson but the Government on financial grounds declined to purchase the work.

I see from Dr. Huth's contribution to Tibetan literature that there are several sets of the Tangyur collection in London (India Office) Paris, Berlin and St. Petersburg. If the Asiatic Society can procure me the loan of a set of the Tangyur collection of 225 volumes, I may be able to make my Tibetan Dictionary an exhaustive lexicon of classical and modern Tibetan."

I may add to the above note, which has been kindly given me by Babu Sarat Chander Das, that there is an account of the Sher Phyin and of the Bodhisattva-vadānkālpalātā in Pundit Hara Prasad Shastri's report on the Bengal Library for 1889, p. 40. The Sher Phyin is a translation in classical Tibetan of a Sanskrit work on Buddhism (the Prajñā Pāramitā). It is being edited by our distinguished Member Babu Pratāpā Chandra Ghose. On the same page the Reporter notices that a Buddhist work in Pali but in the Bengali character has been published for the use of the Buddhists of Chittagong "Buddhism driven from the rest of India, has found a stronghold in this remote district." In the cognate sphere of the Jain religion there has been a publication of a collection of prayers, and of panegyrics of Jinās and saints in ancient Gujratī. The title of this work is Jaina Jñānavālī.

### NOTE III.

#### BUNDELA ARCHITECTURE.

By Babu P. C. Mukarjya lately attached to the Archæological Survey.

Having been deputed to Bundalkhand for the Survey of Bundela Architecture and its practical application to modern requirements, I had to travel over extensive ground in the neighbourhood of Jhansi, &c. The first place of importance is Orcha, the now deserted capital of the Bundela kings, and which contains important palaces. Of these I drew the *Phoolbagh* with the garden and pavilions and the interesting bridge over a branch of the Betwa. I took notes and sketches on the great *Chaturbhuj* temple and *Jehangir Mahal*, &c.

Barnasāgar contains a very picturesque castle on a hillock, by the side of an extensive lake, which I drew on a minute scale, as also an extremely beautiful Hindu temple of the *Chandeli* period, which contains elaborate sculpture. Near the latter, I exhumed some years ago a colossal image of a seated goddess.

Kudhar contains a large mansion, built by Bir Sing Deo,\* during the reign of Jahangir, on a hill, which was surveyed by myself and my draftsman. Mowa Rani-pur possesses many pretty examples of domestic architecture.

Duttia has an important old palace, nine storeys in height, built on a hillock and two *Baolies* (wells with palatial building underground), all constructed by Mahā-rajah Bir Sing Deo. I have surveyed and drawn them all.

Calpi possesses some Mohamedan monuments of the Pathan period, a few of which I drew.

\* This is the murderer of Abul Fazl.

Talhebet has a temple, called *Narsingh*, built on the hill, and attached to the bastion of the fort. It contains fresco-paintings covering the whole inside walls, and about 300 years old. I copied them all in scale. Chanderi is a mine of archaeological wealth, and I made a number of discoveries there. I surveyed and drew *Koshukki Mahal*, and some pretty gates of the Mandoo kings,—and four Bundela palaces; and gathered a good quantity of sketches and impressions of ornaments. On the scarp of the hill-fort I discovered several images, Jain and Brahmanical, cut in the living rock. At Buri Chanderi, I cleared the thick jungles, and discovered a very interesting group of Jain temples, mostly in ruins, and elaborately carved.

I need not describe the other places, that I surveyed in Bundelkhand. In my private travels I visited Jwala-Mukhi, Kangra, Nurpur, Ajmere and Mathura-Vrindavan, where I took sketches. Kangra Fort contains a number of pretty temples, Jain and Brahmanical, which appear to be of the pre-Muhammadan period. Nurpur fort has the under structure of a large Hindu temple, demolished by the Muhammadans at an early age, who built a structure of their own on it. The Khoja Syed Dargah at Ajmere contains many architectural relics of Hindu period, such as finely carved columns, and the big arched gate is flanked by three-storeyed colonnades, of which the elaborate sculpture is covered with a thick coating of white-wash. On the bank of the Poshkar tank is a small Hindu temple of a very early age, which appears to have been desecrated by the Muhammadans. But the most important discovery that I made was at Vrindavan near Mathura, where I found the mediaeval temple of Madana Mohana standing on a large Buddhist *stupa*, of which some ornamental sculptures and rails are still worshipped by the brahmins of the neighbourhood.

#### INSCRIPTIONS.

I need not detail the small inscriptions that I discovered at several places. The important inscriptions which I traced this year were at Chanderi. The first one is on a large slab, about 5 feet  $\times$  2 and contains about thirty-three lines in Devanagari characters of the Chandel period, much resembling the *Chitravarni*. The next size 3'  $\times$  3' and having 38 lines is a rock-cut one on the scarp of the hill fort near a statue of Mahavira. I took also impressions of the *Arabic* Inscriptions in Tughra character from above the gates of Kala Syed and Delhi Darwaza. This was a very risky affair, for the upper structure along with the temporary ladder trembled at the time. From tanks, *Baolies* and tombs I took several impressions. All these impressions along with those of last year were sent to Dr. Hoernle for decipherment. The unfinished Bundela Report and some 73 drawings were submitted to the Government of the N.-W. P. and Oudh on the abrupt termination of the Survey which I presume will be completed by the Archaeological Department.

# JOURNAL

OF THE

## ASIATIC SOCIETY OF BENGAL.



Part I.—HISTORY LITERATURE, &c.

### ERRATUM.

|                                     |             |             |
|-------------------------------------|-------------|-------------|
| At foot of Plates I, II, III and IV | <i>for</i>  | <i>read</i> |
|                                     | CHAGHALTAI. | CHAGHATAI.  |

A square doorless structure was disclosed, which I take to have been the plinth of a temple. In the light of fuller experience, I should like to take an opportunity of again examining this mound, which is not far from the border of the Muzaffarnagar district.

Six gold Indo-Scythic coins, of great beauty and rarity, were found near but outside the base of this mound. These were as follows :—

Three of Vasu Deva—Average weight 120·17 grains.

Two of ditto (differing) „ 118·87 do.

One of Bhri Sháka. Weight 120·0 grains.

These kings were contemporary in Northern India with the earlier Gupta kings, or say not later than A. D. 200.\* The coins were, by order of Government, sent to the Curator of the Lucknow Museum.

\* [Vasu Deva reigned from about 122-176 A. D. ; the Gupta rule commenced about 319 A. D. Ed.]



Some silver coins, of comparatively recent date, and of no archæological value, were found buried close under the surface of this mound. They were sold as silver, and the proceeds credited to the excavation fund.

I next commenced operations on a fine mound in the old ruined Fort of Mor Dhaj (*Mayūra Dhawaja*, also known formerly,\* but not now apparently, as *Munavvar Jūr*), lying 7 miles north-east of Najibábád, to which I drew the attention of General Cunningham, R. E., many years ago, and which has been briefly described by him in the *Archæological Reports*, Volume II, page 237.

The mound was in dense jungle, and used† to be known as *Shigrí* ((Qy. *Sher-Garhí*, or *Shrī-Garhí* ?), but I now find that this name, like that of *Munavvar Jūr*, has dropped out of local use and knowledge.

After careful clearing of the overgrowth of jungle, the mound was disclosed, 35 feet in height, and 308 feet in circumference, circular. A closer examination showed that the outer portion of the mound was composed of brick rubbish, the remains of some large superstructure. The size and importance of this building, originally, no doubt, a large Chaitya, with the usual series of umbrella-like discs composing its lofty spire, and in later days probably a temple, may be guessed at from the fact that the entire surface of the mound, to a depth of from 3 to 8 feet, and many square yards of plain surface around its base to a similar depth, were covered with broken brick debris. I am informed that, within the memory of living men, there were still portions of the superstructure standing on the mound, but that the materials were utilized in the construction or repair of bridges on the Najibábád and Kotdwára road, which skirts the base of the old fort, at a distance of about 400 yards. If this be true, it is a matter of very serious regret.

I first had the covering of debris very carefully removed from six foot lines on the centre of all four sides, these lines meeting at top, and being extended to the foundation, 7 feet below the present level of the soil. In this debris nothing was found of any interest. It was all composed of pieces of brick, which had mostly been of the large size usually found in these old remains. No pieces of building stone were found.

The only things of any interest found in this or in the surrounding debris were the following :

(a). A portion of a terra-cotta figure ; left leg from groin to ankle,  $7\frac{1}{2}$  inches ; right thigh (only)  $4\frac{1}{2}$  inches. Wearing a tight *dhotí*, with an ornament over the seat of the genital organ. (This ornament differs

\* Within the last 20 years.

† Within 20 years back.

from that in Fig. 4, Pl. XIX, Prinsep's Thomas' Indian Antiquities). The figure was in very high relief on a brick slab, and there are traces of drapery or other carving on the slab between the legs. Found in debris of well 60 yards north-east.

(b). A small *headless* figure (terra-cotta) probably of Buddha the Teacher, seated cross-legged, with soles of feet upturned; with the elbows on the thighs, and the hands (broken) raised in front of the body. The fingers were originally no doubt in contact, right index on left, in the attitude of demonstration. The figure is seated on a lotus ornamented couch, supported on the heads of two couchant antelopes. As the antelope was the totem or cognizance of Santánáth, the 16th Jain hierarch, the statuette *may* be his, but I take it to be a Buddha.

Total original length of figure about  $4\frac{1}{2}$  inches. Present total length of fragment of figure, seat and supporters, 6 inches. This was also found in the debris near the well, not on the mound.

(c). Head, neck and shoulders of a small sandstone figure, probably female. The hair arranged in a highly ornamental manner in a double roll. Features undistinguishable. This figure has evidently been broken off a larger work, of which no portions were found. No other pieces of this stone were found.

(d). A portion of apparently the lintel of a door. It is of very heavy black basalt. It represents a figure seated on its hams, with the legs partly crossed, with a club (?) held upright in each hand, the base of the club resting on the thigh of the figure. This figure is within a Chaitya.

On each side of the Chaitya are what appear to be issuant demons or elephants. Sculpture of the rudest. There is an indication of a trunk and large ears, so that the figure may have been meant for Ganeśa; but the position is against that, and there is no sign of the usual rat. Features of figure gone. No other portions of this series, nor of any figures in this stone were found. Height of Chaitya 7 inches. Interior of Chaitya,  $3 \times 2\frac{1}{2}$  inches. This was found *within* the old well, in the accumulated rubbish which filled it.

(e). A conical implement of stone. Either a hammer or a rice-husker. It is marked with a series of indented sockets all round the thick end, which would seem to have been intended to give the fingers a purchase or grip of the implement when in use. The lower end is much chipped. Extreme length  $5\frac{1}{2}$  inches; extreme breadth  $3\frac{1}{8}$  inches.

(f). A small brick fragment from a canopy of a figure. Debris of main mound.

(g). A mason's plumb weight of burnt earth, shaped like some in

use to-day, with a hole in the centre of the top in which to fasten the cord. In the debris in the old well.

The core of the mound, that is to say, the original *stúpa* was revealed by the clearing away of the debris from the above lines, and proved to be conical in general elevation, with a truncated top; the superficies being found to be in a series of deep steps all round, the bottom step, *i. e.*, the plinth, being much wider on top than the others, thus forming the usual ceremonial promenade (*parikarma*) surrounding the *stúpa*. The foundation of the structure is 7 feet below present ground level, but the latter is, to the depth of at least an average of 3 feet, composed of debris. There was no trace of a railing, nor were any pieces of a railing found. The surrounding earth might repay digging.

I then commenced to sink a shaft down the exact centre of the *stúpa*. Two and a half feet below the platform-like top, the relic chamber was found. It was completely full of terra-cotta objects, in loose mould, huddled in without care or arrangement, and much broken, thus showing, I think, that the chamber had already been opened, and no doubt rifled of its casket and of anything supposed to be valuable.

These terra-cotta objects found in the relic chamber, consisted of the following:—

*First.* At least one thousand small tablets  $3'' \times 2''$  from  $\frac{5}{8}''$  to  $\frac{7}{8}''$  thick at the base, and from  $\frac{3}{8}''$  to  $\frac{5}{8}''$  at top. They are all stamped from the same die, or cast in the same mould, and bear a seated figure similar to those of Buddha the Ascetic, in the usual position of meditation, with the feet impossibly folded, soles uppermost, and the hands joined in the lap, palms upwards, the right hand being on top. The figure is, however, *naked*, and Buddha is seldom so represented. It is seated upon an ornamented circular pedestal, and is in *mezzo rilievo*. The hair is arranged in a knot on the top of the head, and from that knot appears to rise a high plume-like ornament with a spreading top, possibly representing peacocks' feathers. This might, however, be intended to represent the top of the ornamental back of the seat, but I take it to be a head ornament. There is a halo or 'glory' round the head. There are two diminutive naked male figures as supporters, one on either side; holding in their inward hands (*i. e.*, one in the right hand and the other in the left) objects which may be wands of office or long bows. These tablets bear no inscription. There is nothing on the reverse. They were no doubt votive tablets. Several hundreds of these tablets were broken to pieces. Each tablet was separate, and none were enclosed in clay or in model *stúpas*. A collection has been deposited in the Lucknow Museum, two were submitted to the Government N. W. P., and about six hundred have been left with my successor in Bijnor.



As far as I can discover, no such tablets have been hitherto found anywhere else. In his description of Sárnáth, (Archæological Reports, Volume I, page 119), General Cunningham says incidentally that he has seen in Burma accumulated heaps of small burnt clay figures of Buddha, but he does not describe them. If those were not similar to these now discovered by me, then my find is, I believe, unique. There is no other mention of any similar figures in the entire series of the Archæological Reports. The figures *may*, however, represent some Jain patriarch, but I doubt it, from the immense number of them, and their being evidently in a relic chamber.

*Secondly.* Two large circular terra-cotta medals, both from the same die;  $3\frac{3}{4}$  inches in outside diameter. Having been less thoroughly baked than the tablets, these medals were much broken, the more beautiful of the two being unfortunately badly shattered.

These handsome medals are quite unique. Somewhat similar representations are said to be depicted on the Bharhut stones, now in the Indian Museum, (*vide* General Cunningham's *Bharhut Stúpa*, Pl. XIII, which, however, is not at my hand for reference). Also see Prinsep's (Thomas') Indian Antiquities, Fig. 1, Pl. XIX, where is figured a portion of a clay medal found at Bihat. Pakna Bihar (Archæological Reports, Vol. XI, p. 31, Pl. XII.), Sravastí (*ibid.*, p. 89, Pl. XXVIII), Dharáwat *ibid.*, Vol. XVI, p. 45, Pl. XIII), and Kusinagara (*ibid.*, Vol. XVIII, p. 70) are, as well as I can discover the only places where terra-cotta seals have been found. None of the seals found at the first three places are similar to, or of such fine execution as mine; and unless some of the Kusinagara seals were similar, which apparently was not the case, or they would certainly have been described, those now found by me are the first of their kind.

Mr. Carlleyle gave no plate of his (Kusinagara) seals, but a very meagre description of some only; a description which does not represent either of the Mayúra Dhawaja seals. Lac seals have been found in many stúpas, but none bearing an impress like these.

The following is a description of these beautiful medals. In the centre is Buddha the Ascetic seated in the usual attitude save that there is an appearance of something on his right, which may, however, be an effect of the earth which was adherent to the seal. There is a halo round his head, and the semblance of a necklace, which may possibly be the edge of the mantle, leaving the right shoulder bare. Buddha is seated within a handsome Chaitya with a lofty pinnacle of the diminishing umbrella type, decorated with streaming garlands. On either side of the pinnacle are flying human figures, with perhaps drums or other musical instruments. These flying figures are said by General



Cunningham (Arch. Report, I, 263) to be the usual accompaniments of the Ascetic Buddha. On either side of the body of the Chaitya stands a male figure as a supporter.

These wear the *dhotí*, and one a necklace. Their hair is dressed high, each in a different style, and there is a halo or 'glory' round the head of each. (Possibly the figure on the proper left, wearing the necklace, is a woman?) Each would seem to carry a *chaumrí* in the outer hand, and at least one, if not both, a bow or wand of office in the inner. (There is an indication that the line forming this implement near the figure on the proper left is part of an oval ornamental ring round the Chaitya.) It is impossible to say clearly what this figure has in his right hand. There are also some matters unintelligibly depicted alongside of each figure, especially to the left of the left hand supporter. There are two marks on either side of the Chaitya which look like conventional palm trees.

It will be noted that on the tablets Buddha is large, while the supporters are diminutive. Here Buddha is small and the supporters gigantic. Underneath the base of the Chaitya is the Buddhist creed, of the usual formula "*Ye Dharmmá hetuprabhavá &c.*" Under the inscription is a strange figure, apparently a woman, kneeling, with uplifted adoring hands, before what looks like a pan with handles set upon a *chúla*. This figure may be that of the Bhikshuní *Utpalá* or *Utpalavarṇá*, who was the first person to see Buddha after his return to earth at Sankisa from his visit to his mother in the Trayastriṃśa heavens; (Cunningham, Archæological Report, XI, p. 26) or it may represent something of the nature of the Burmese *shiko*. (See Cunningham, regarding some kneeling figures, somewhat analogous; Arch. Report, Vol. I, p. 9.) On the reverse of that one of these two large medals which was photographed is a rude delineation of the Bo tree, cut after the stamping of the medal. This is not on the duplicate medal. The least broken of the two large medals, and six copies of the photograph of both sizes of medal by Col. Waterhouse were submitted to the Government N.-W. P.\* The finest but most broken medal is in the Lucknow Museum.

*Thirdly.* About two dozen smaller terra-cotta medals. Several of these were broken to pieces. The clearest one has been photographed. They contain a panel with a seated ascetic Buddha, having two attendants on each side. The panel is surmounted by a miniature stúpa in the centre, with a still smaller one on either side of it. The panel and stúpas are surrounded by a wreath of bells. Underneath the panel is

\* [This photograph, together with a description of the medals, was published in the Proceedings of the Society, for April 1887. Ed.]

the Buddhist creed, as above. Specimens of this medal have been deposited in the Lucknow Museum.

*Fourthly.* One copper *salai* or instrument for applying antimony to the eyes, similar to those found in the Bihat excavations (*vide* Prinsep's (Thomas') Indian Antiquities, Fig. 13, Pl IV.)

Judging from the type of character used in the inscriptions on these medals, the stamp was probably of the 8th, or at latest of the 9th century of the Christian era. The date of the building of the stúpa cannot therefore be earlier than A. D. 700.

The excavating shaft was carefully continued down to the foundations, but nothing else was found. The entire mound consists of an uniform mass of solid brick work. The bricks are chiefly of large size ( $14 \times 8 \times 2\frac{1}{4}$ ), laid in mud. They are all well-burnt, some being very hard. Small galleries, driven in at about present ground level, or a little lower, and at the cardinal points, might yield something. The shaft ought to be thatched over before the rains, or it will fill with water, and the mound will be much injured thereby.

The old fort of Mordhaj (Mayúra Dhawja), if it were built by the king of that name, would date from about the beginning of the 10th century of our era. A Mayúra Dhawja reigned in Gaṇḍa (Gonda), a portion of the ancient realm of Ayodhya, in 900 A. D. (Archæological Report, I, 329. But see Vol. XVII, 98, where General Cunningham may be understood as placing Mayúra Dhawja and his brethren in the 8th century A. D.). Mr. Carlleyle, not a very trustworthy authority, however, (Archæological Report, VI, 233) has a Mora Dhawj flourishing anywhere between 50 and 210 B. C.; while the popular tradition, which makes him contemporary with the Paṇḍus, would relegate him at least to the 14th century before Christ! We may assume, I think, that the fort was not built before the beginning of the 10th century. If so, and if I am correct in referring the characters on the seals to the 8th or at latest the 9th century, (and I think that the former is more likely,) then, of course, the stúpa which I have excavated is much older than the ruined fort which surrounds it.

The whole country round the fort, for several square miles, is covered with almost uninterrupted traces of ancient ruins, chiefly composed of pieces of the large bricks of the builders of those days. All cuttings in the course of the work of widening the Najibábád and Koṭ-dwára road, about to be taken in hand, should be carefully carried out, and well watched, where they pass through these ruins. The place must have been the site of a large and wealthy city. It may have been one of those many in this neighbourhood which perished in the exterminations of the ruthless Tímúr, at the close of the 14th century. There

are many such brick ruins in the Bijnor district, some of them, and the most extensive, in the middle of dense forest; their very names vanished from memory long ages ago. All these remains would I think repay excavation. I grieve that I never had leisure to take it up.

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*The Coins of the Chaghatái Mughals.*—By E. E. OLIVER.

(*With four plates.*)

In the January number of the of the Royal Asiatic Society's Journal for the past year, I endeavoured to give a short geographical sketch of the Chaghatái Khánate, and a historical outline of the rulers of this, the most obscure branch, of the great house of Chengiz. A branch which nevertheless ruled over a vast extent of country, from Dzungaria, on the Chinese frontier, to Afghánistán; had its eastern capital at Almálik, the modern Kuldja, north of the Thian Shan mountains; and its western at Bukhárá in Máwará-un-Nahr. Of this line Mr. Poole, in the Vith Volume of the British Museum Catalogue of Oriental coins, says the national collection possesses but three coins, struck by Danishmandjeh and Búyán Qulí: and I therefore propose in the following list, to bring together all the numismatic evidence I have been able to obtain through the kindness of friends, who have so generously placed their coins at my disposal. I would take this opportunity to tender my best thanks to them, and also to point out that at present there is no dynastic list of rulers that can be considered accurate or complete, either in regard to the names of the Kháns, the extent of their appanages, or the length of their reigns, and that an extensive comparison of their monetary records affords one of the most hopeful means of obtaining further evidence. Every well verified name, date and mint that either private individual or public society can publish may prove a useful contribution towards the compilation of any history.

With the exception of Akhur all the mints noted in the present series are towns within the western division of the empire, Bukhárá, Samrqand, Kash, Soghd, Utrár, Tarmaz, and Badakhshán. What coinage may have issued from the eastern mints would probably be more likely to find its way to China than to India. On almost every coin the characteristic mark of the dynasty ☉, a Tibetan 'Chh' turned upside down, occupies a prominent position. This on half a dozen of Khalíls and Qazáus [Nos. 12 to 17] is replaced by one of a slightly varying character ☉, the lower half of which is a noticeable mark on the coinage of the Kháns of the Qrim, also descendants of Chengiz.

The signification of this characteristic Chaghatái mark is a question of interest. According to the chronicle of Ssanang Setzen, who, himself a prince of a leading tribe, wrote a history of the "Eastern Mongols" in 1662, which is accepted as a high authority, the royal house originally sprung from that of Tibet: and Howorth in his history refers to a terminating Tibetan syllable written "*k'ri*" pronounced "*thi*," which means "throne," and is found in all the names of the ancient kings and princes of Thibet. Possibly Tibetan scholars may be able to throw some light on the  $\Psi$  "*chh*" in connection with the house of Chaghatái.

Most of the rulers describe themselves on their coins as "*Kháqán*", probably as not recognizing the sovereignty of the supreme Qááns of the line of Oktai, and several affix the name or title of "*Tímúr*," as Yasún, *Khálíl*, Qazán, and in the lists Tuká, Duá, and Tughlaq, though on the first three coins, noted as struck at Bukhárá, neither word is used. The following list, taken from my paper in the R. A. S. Journal, is the best approximation I can offer of the line of Chaghatái Kháns, but it is very possible that some readers of this Journal may be able to supply from coins in their cabinets some additional means of verification and check. I need hardly say I shall be greatly obliged for any such information.

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|                                       |                                                                                    |
|---------------------------------------|------------------------------------------------------------------------------------|
| A. H. A. D.                           |                                                                                    |
| 624—1227                              | I. Chaghatái.                                                                      |
| 639—1242                              | II. Qará Hulákú.                                                                   |
| 645—1247                              | III. Yassu Mangú.                                                                  |
| 650—1252                              | Qará Hulákú, restored.                                                             |
| 650—1252                              | IV. Organah ( <i>Khátún</i> ) spent the 10 years of her reign probably at Almálik. |
| 659—1261                              | V. Alghu.                                                                          |
| C. $66\frac{2}{4}$ — $126\frac{4}{6}$ | VI. Mubárák Sháh, driven from the throne the same year as nominated.               |
| C. $66\frac{5}{4}$ — $126\frac{4}{6}$ | VII. Borák.                                                                        |
| 668—1270                              | VIII. Nikpai } both nominated and killed within                                    |
| 670—1272                              | IX. Tuká } 3 or 4 years.                                                           |
| C. 672—1274                           | X. Duá.                                                                            |
| 706—1306                              | XI. Kunjuk.                                                                        |
| 708—1308                              | XII. Taliku, reigned but a few months.                                             |
| 709—1309                              | XIII. Kabák.                                                                       |
| 709—1309                              | XIV. Issenbuka, appears to figure under several names.                             |
| C. 718—1318                           | Kabák restored.                                                                    |



|                                       |          |                                                      |
|---------------------------------------|----------|------------------------------------------------------|
| 726—1325                              | XV.      | Ilchikdai.                                           |
| 726—1325                              | XVI.     | Tarmáshírín.                                         |
| 73 $\frac{9}{4}$ —133 $\frac{9}{4}$   |          | Sanjar (? jointly or when Tarmáshírín was in India). |
| 734—1334                              | XVII.    | Jinkshí.                                             |
| 739—1338                              | XVIII.   | Yasún.                                               |
| C. 741—1340                           | XIX.     | 'Alí Sultán.                                         |
| „ 742—1341                            | XX.      | Buzun.                                               |
| „ 74 $\frac{3}{4}$ —134 $\frac{2}{3}$ | XXI.     | Khalíl.                                              |
| „ 74 $\frac{4}{5}$ —134 $\frac{2}{4}$ | (? XXII. | Muhammad Pulád, a doubtful prince.)                  |
| „ 745—1344                            | XXIII.   | Qazán.                                               |
| 747—1346                              | XXIV.    | Danishmandjeh.                                       |
| 749—1348                              | XXV.     | Búyán Qulí.                                          |
| 760—1359                              | XXVI.    | Tímúr Sháh.<br>(?) Buáyán.                           |
| 761—1360                              | XXVII.   | Tughlaq Tímúr (nominal).                             |
| 765—1363                              | XXVIII.  | Ilyás Khwája.                                        |
| 767—1365                              | XXIX.    | 'Adil Khán.                                          |
| 767—1365                              | XXX.     | Kábul Sháh.                                          |

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|          |                |                         |
|----------|----------------|-------------------------|
| 771—1369 | Suyurghatmish. | } nominal, under Tímúr. |
| 790—1388 | Maḥmúd.        |                         |

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## LIST OF COINS OBSERVED.\*

QARA HULÁKU, son of Mutahkan. Mutukan of the lists and grandson of Chaghatái. According to Shaw *اوغلی* means a male child in Eastern Turkistan.

Baldah Bukhárá, xx1 H. Fræhn's Recensio.

قرا هلاکو موته کن اوغلی ... سد... م بیلده اینجا ... حدی ...

ALGHU. Algu of the lists, son of Baider and also grandson of Chaghtái.

Bukhárá, 660 H. Fræhn's Recensio.

ضرب هذا الدرهم بالبلدة ال... سنة ستين وستمائة  
 سكه | بخارا  
 ( الفاخرة ) ( الغو بايدار اوغلي )  
 الفاخرة

\* In the above list, besides private collections, I have referred to Fræhn's Recensio, the British Museum Catalogue, and M. Tiesenhausen's notice of M. le Count Stronganoff's collections.

No. 1.  $\mathcal{A}$ . 1·55. Bukh $\bar{a}$ r $\acute{a}$ , 660 H. Mr. L. White King.

In centre سكه | بخارا

Both margins alike ضرب... هذا الدرهم بالبلدة الفاخرة سنة ستين وستمائة

KABAK. The Guebek of D' Ohsson. The mint Madīnatu-l-rijāl (the city of the people) Tarmaz is the Tirmid of the maps north of the Oxus.

No. 2.  $\mathcal{A}$ . 1·10; 119·5 grains. Madīnatu-l-rijāl Tarmaz. My cabinet

لا اله الا ... | محمد ربه ... | الله سكه...

[عراسه] | اعظم مالک | م کباک

| مدينه الرجال | ترمذ

خان | ... الله ملكه

... | ... | عثمان | ...

No. 3.  $\mathcal{A}$ . 1·3; 119 grains.

Bukh $\bar{a}$ r $\acute{a}$ , 71x H. My cabinet.

بخارا | الملك لله | سكه | ... مدار الضرب

کباک خان | الخاقان العادل

... | ... | ... | عشر و | سبعمائه

| ... عدله | ...

No. 4.  $\mathcal{A}$ . ·8; 19 grains.

Bukh $\bar{a}$ r $\acute{a}$ , 722 H. Mr. Rodgers.

کباک | الخاقان | العادل | خان

سكه | بخا | را | ۷۲۲

Ditto. ·75, 20 grains. Bukh $\bar{a}$ r $\acute{a}$ , 723, 725 H.

My cabinet.

Ditto. Ditto; 722, 723, 724, 725 H. Count Stronganoff.

Ditto. Samrqand, 725 H.

Ditto.

No. 5.  $\mathcal{A}$ . ·8; 29 grains. Madī [nat] Tarmaz, 71x H. My cabinet.

الله | لا اله الا | محمد رسول | الله

سكه | مد... | ترمذ

... عشه... سبعة...

... [سكه] ...

#### TARMASHIRIN.\*

No. 6.  $\mathcal{A}$ . ·75; 18 to 22 grains. Utrár, 733 and 734 H. Mr. L. White King.

لا اله الا | لله وحده لا | شريك

علا الدين | توما شيرين | خان

له ملكه | اترار ۷۳۳

خدا | الله ملكه

Ditto.  $\mathcal{A}$ . ·8. Madīnatu-l-rijāl Tarmaz. Count Stronganoff.

... الملك | لا اله الا | لا شريك | ... الله

سكه مدينه الرجال ترمذ

\* Regarding mint Utrár see J. R. A. S., Vol. XX, Part I, page 86.

Ditto. R. Samrqand, 726 H.

Ditto.

لا بهارة | ..... | الا بالعدل

سکه | سمر قند | ۷۲۶

## SANJAR.

No. 7. R. 1·15; 116 grains. Samrqand, 731 and 732 H. My cabinet.

الله

لا اله الا الله | محمد رسول الله |

صلى عليه وسلم

ضرب سکه سمر | قند

في ق سته | ۷۳۱

سنجر خان | ساسد... بن

| ضرب في ايام دولة السلطان

| العادل علا الدنيا والدين

| خلد الله ملكه

## JANKSHI.

No. 8. R. 7; 19 grains. Balahdah-Utrár, xx6. My cabinet.

سکه | ... لده ق اترار | سته ست | مان... جنکشي | خاقان عا | ... ل زيد | عدله...

Ditto. Utrár, 736, 737, 739 H Count Stronganoff.

Ditto. Bald Utrár 73x.

Ditto.

السلطان | الاعظم | خلد الله | ملكه

سکه | بلد ق اترار | سته ۷

## YASUN.

No. 9. R. 1·2; 120·5 grains. Madínatu-l-rijál Tarmaz. My cabinet.

... طان | يسون تيمور | الخاقان الا | ... ملكه ... رجال | ... ق ... مذ

Ditto. R. 1·2, 122·5 grains.

Ditto. Mrs. Stoker.

سکه... يد... | الرجال ق

... ون تيمو... | ... قان العا |

... .. | تره...

... خلد... | ملكه

No. 10. R. 1·05; 123·5 grains.

Ditto. Mrs. Stoker.

لا اله الا الله | محمد رسول الله | سکه

... ن... مور | لخواقان الاعظم | بهادر خان

| تره مدینه الرجال

| خلد | الله ملكه | ... ق عد...

ابوبکر | ..... | ..... | ...

No. 11. R. 1·1; 114 grains. [Samr]qand, 740 H. Mr. L. White King.

لا اله الا الله | محمد رسو... | سکه

يسون تمر خان | الخاقان العادل

سمر... | قند في س... | ۷۴۵

... عظم خلد | ... ملكه

## KHALIL.

No. 12. *R.* 1.25; 119 grains. [Samr]qand, 74x H. My cabinet.  
 ... | ... | ... | ... | ... | ... | ... | ...  
 لا اله الا الله | محمد | رسول الله | ... | ... | ... | ... | ...  
 ابو | ... | ... | ... | ... | ... | ... | ...

No. 13. *R.* 1.15; 121 grains. Bukhárá, 744 H. Mrs. Stoker.  
 بخارا | ... | قان الاعظم | سلطان خليل  
 لا اله الا الله | محمد | رسول الله | ... | ... | ... | ... | ...  
 سنه ٧١٤ | ... | ... | ... | ... | ... | ... | ...

No. 14. *R.* 1.15; 123.5 grains. Bukhárá, 744 H. Mr. L. White King.  
 السلطان العادل | خليل تيمور | ... | ... | ... | ... | ... | ...  
 لا اله الا الله | محمد | رسول الله | ... | ... | ... | ... | ...  
 ابو بكر | ... | ... | ... | ... | ... | ... | ...  
 سنه ٧١٤ | ... | ... | ... | ... | ... | ... | ...  
 سبعمائة | ... | ... | ... | ... | ... | ... | ...

## QAZAN.

No. 15. *R.* 1.2; 116 grains. Bald-i-Badakhshán, 747 H. My cabinet.  
 قزان | في ايام دولة | الخاقان الاعظم | سكه | دارالضرب | ... | بلد بد | خشان  
 سلطان خلد | الله ملكه | في سنه ٧١٧

Ditto. *R.* 1.15, 123 grains. ditto. Without date. Mrs. Stoker.

No. 16. *R.* 1.20; 123 grains. Bukhárá, 746 H. Mr. L. White King.  
 الرحمن | المظفر على اعدائي | .. | لسلطان  
 العادل ابوالمظفر | ازان | سلطان | بلد ملكه | ضوب بخارا | سنه ٧١٧  
 ... | ست و | اربعين | ... | ... | ... | ... | ...

No. 17. *R.* 1.25; 118 grains. Bukhárá, 744 H. My cabinet.  
 السلطان | ... | فازان تيمور خان | لا اله الا الله | محمد | رسول الله | ... | ...  
 خلد الله | ملكه | ابو بكر | عمر | ... | ... | ... | ...  
 سكه | بخارا | بخارا | بخارا | سنه ٧١٤ | ... | ... | ... | ...  
 ربع | و اربعين | سبعمائة | سنه | ... | ... | ... | ...


## DANISHMANDJEH.

*R.* 1.25, 115; grains. Bukhárá, 747 H. British Museum.  
 خاقان العادل دانشمند | خلد الله ملكه | لا اله الا الله | محمد | رسول الله  
 سبع | سبعمائة سنه اربعين | بخارا | ابو بكر | عمر | عثمان | على




## BUYAN QULI.


- No. 18.  $\mathcal{R}$ . 1·2; 111 grains. Akhúr, x57 H. My cabinet.  
 السلطان | الاعظم خاقان المعظم | ابوالمظفر  
 خان | بو.... خلد | الله  
 ملكه سكه... ب | اخور  
 لاله الا هو العزيز الحكيم... له...  
 و الله الغني | و انتم الفقرا | لاله  
 ... الله | محمد رسول الله  
 ..... | عمر | ... | .. | على
- No. 19.  $\mathcal{R}$ . 1·2; 119·5 grains. Samrqand. Mr. Rodgers.  
 السلطان العا | دل بويان قلى | خلد الله ملكه  
 لاله الا الله | محمد | رسول الله  
 | ضرب | سمرقند  
 ابوبكر | ع... | عثمان | على
- No. 20.  $\mathcal{R}$ . 1·25; 118 grains. Samrqand, 7xx. Dr. Stulpnagel.  
 الملك لله | العدل الملك بوا |  
 الخاقان | العادل | بويان قلي خان  
 خلد ملكه  
 لاله الا الله | محمد | رسول الله | سكه—  
 سمرقند | صلى | عليه | رمضان | في سنة  
 | .. | . . . | سبعمائه
- No. 21.  $\mathcal{R}$ . 1·55; 116 grains. Samrqand, 755·4 H. My cabinet.  
 السلطان العا | دل بويان قلى | خلد  
 الله... لكه \* خان \* .....  
 | سنة خمس وخمسين | سبعمائه  
 لاله الا الله محمد | رسول  
 الله | سكه | سمرقند  
 في | سنة | [احد] ... |  
 ..... | ..... | .....
- No. 22.  $\mathcal{R}$ . 1·25; 120 grains. Samrqand, 754 H. My cabinet.  
 السلطان الاعظم | بويان... خان  
 ... | ملكه | ..... | سمرقند  
 شهر... | سنة | اربع | و خمس | وسبعمائه  
 لاله... الا الله | محمد | رسول الله |  
 ابوبكر... | عمر | عثمان | على ..... | في  
 شهر... | سنة | اربع | و خمس | وسبعمائه
- No. 22 A.  $\mathcal{R}$ . 1·2; 122 grains. Samrqand, 7x5 H. My cabinet.  
 الرحمن | المظفر على اعداي | السلطان  
 العادل | بويان قلي خان زيد عدد |  
 ..... | ..... | ... خمس | .....  
 | ..... | سبعمائه
- No. 23.  $\mathcal{R}$ . 1·25; 15 grains. Samrqand, 755 H. My cabinet.  
 السلطان العادل | بويان قلي  
 خان | خلد الله ملكه  
 في شهر... | ..... | خمس  
 وخمسين و سبعمائه  
 لاله الا الله | محمد | رسول  
 الله | سنة | ٧٥٥  
 سكه | سمرقند... | ابوبكر  
 عمر | ..... |


No. 24. *R.* 1·2; 124 grains. Utrár, 752 H. My cabinet.  
 العادل | بويان قلي خان | خلد الله ملكه |   
 ..... | ٧٥٢ | اترار | .....


No. 25. *R.* 1·25; 118 grains. Utrár. My cabinet.  
 الخاقان العادل | الاعظم بويان قاي  
 | خلد الله ملكه | ... | اترار |  
 ..... سموات و ما فى الأرض .....  
 ..... حفظهما و هو العلي .....


Ditto. Samr-Utrár. My cabinet.  
 قان العادل | الاعظم بويان | خلد الله  
 ملكه | سكه سمر اترار | زيد عمر  
 ..... | عمر | علي

No. 26. *R.* 1·25; 122 grains. Bukhárá, 756 H. My cabinet.  
 ... سلطان العادل | ... ان قاي خان خلد... | لا | الله | الا | ... | محمد |  
 له ملكه  و زيد | الله عمره سكه | بخارا  
 ابوبكر | عمر | ..... | ٧٥٦ | بخارا | .....

No. 27. *R.* 1·25; 123 grains. Bukhárá. My cabinet.  
 لسطان العادل | بويان قلي خان | خلد الله  
 ملكه | سكه | بخارا

No. 28. *R.* 1·25; 122 grains. Kash, 753—4 H. My cabinet.  
 السلطان العا | دل بويان قلي | خلد الله  
 ملكه...  
 في شهر | ..... | ..... | 

No. 29. *R.* 1·25; 126 grains. Kash. My cabinet.  
 السل | بويان قلي بها... خلد |  
 الله ملكه | ... | 

Ditto. Soghd. Count Stronganoff.  
 خان | الخاقان | العد | ... | العادل  
 | بويان... | خلد  الله

BUAYAN. ? Seldúz. After Búyán Qulí was murdered in 760 H. and the puppet Tímúr Sháh set up, there was something like general anarchy, various Amírs seizing provinces and asserting their independence. The whole of Máwará-un-Nahr was seized by an Amír whose

name is generally written Bayán Seldúz بیاں سلدوز, spelled "Biaun Suldoze" in White's *Institutes of Timur*. He seems to have governed in a way, though a dissipated hard-drinking Amír, and to have been put to death by Tughlaq Tímúr Khán (ruling in Eastern Turkistan) circa 764 H. It seems possible that the two following coins may be his.

No. 30. *AR*. 1·25; 121 grains. Madínatu-l-rijál Tarmaz, 764 H. My cabinet.

العدل الملك | بوايان ۷۶۴ | سكاه | مدينه ق الرجال | ترمذ

Ditto. ? Bukhára, 7xx H. Mr. L. White King.

...عدل الملك | بوايان | سكاه | بدار ق ضرب | را... (C)

Doubtful coins.

*AR*. 9. (? Duá.) Badakhshán, 69(4) H. Count Stronganoff.

ق سكاه بدخشان سنه اربع و تسعين | لا اله الا | الله محمد | رسول الله  
و تسعمائة

No. 31. *AR*. 1·2; 120 grains. Mahmu[dábád], x27 H. Mr. Rodgers.

... [عمارة] مالك ... | [عمله] — [C] — [C] — [C] — [C] | ۷۷۱ | سكاه لا... | ق...

No. 32. *AR* 1·2; 124 grains. Samrqand, 753 H. Mr. L. W. King.

...طان ابو | لعدل [ناصر الد] | ين بوايان قاي | \* ق\* | سكاه سمرفند | ۷۵۳

Ditto. Without mint, 754 H.

Ditto.

In these two coins and in some others, Búyán Qulí calls himself Násiru-d-dín.

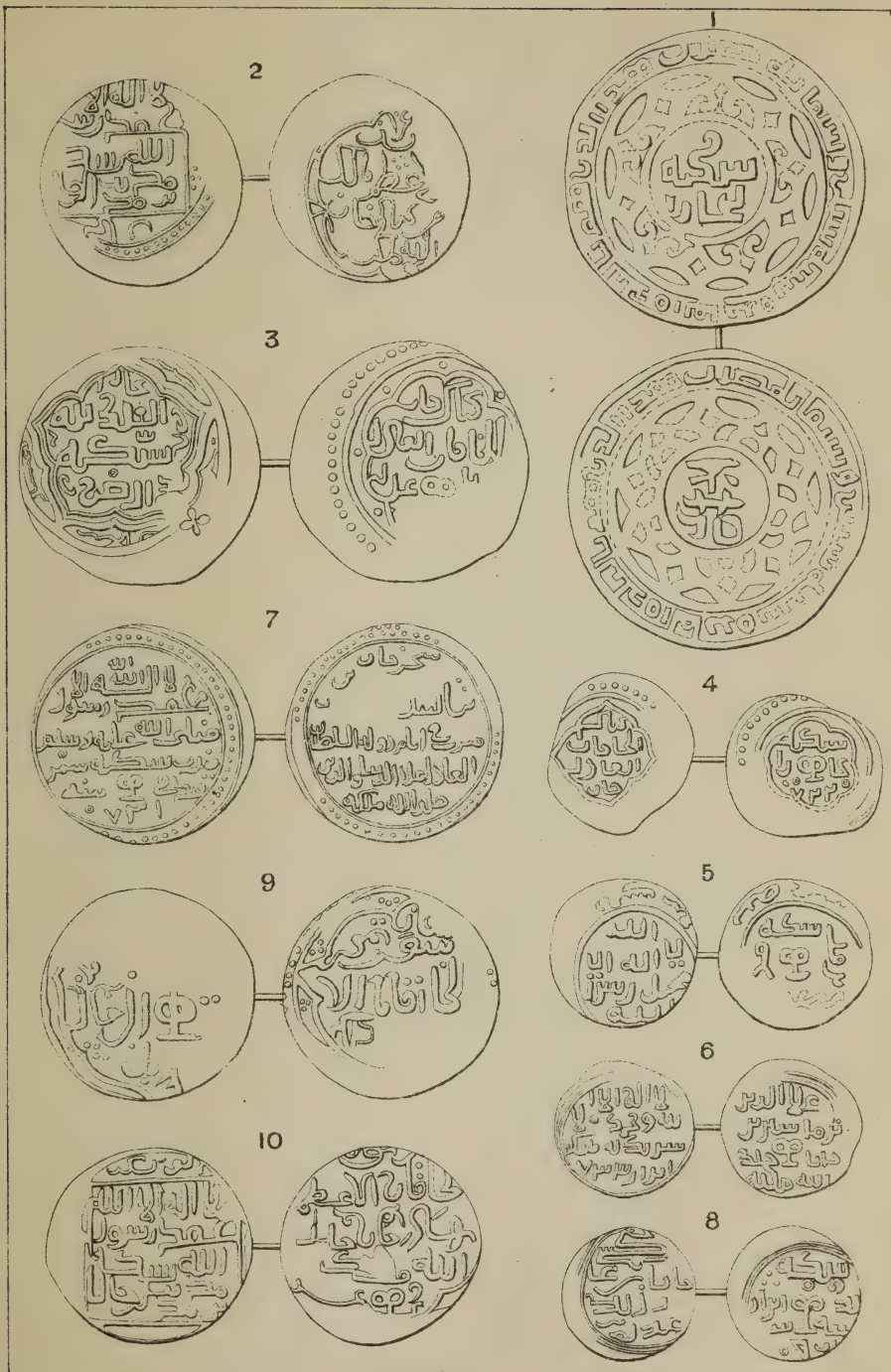
KATLAGH KHWÁJA; the son of Duá, who with his father invaded India, and appears to have been at Jalandhar 696, as far as Delhi 697-8, and Lahore 701 H. (See Zia-ud-din Barni, and D'Ohssoon's account.) His copper coins, like the two following, are not uncommon in India.

No. 33. *Æ*. 6; 53 grains.

ضرب لو... ق | ...جضرت... | ...س

No. 34. *Æ*. 6; 52 grains.

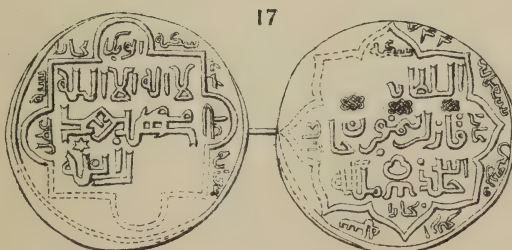
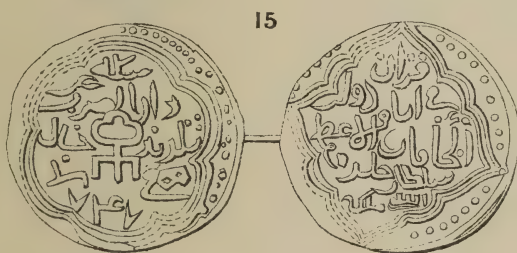
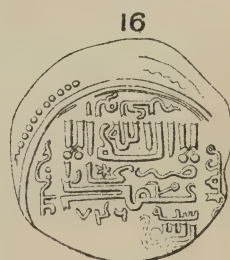
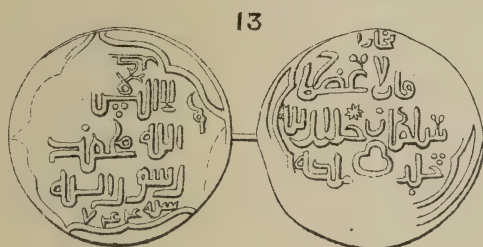
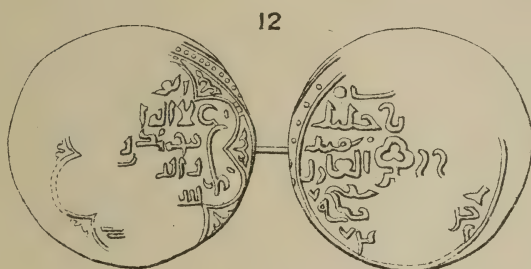
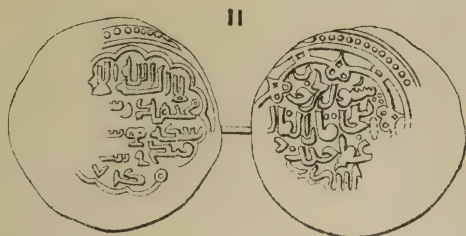
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COINS OF THE CHAGHALTAI MOGHALS.

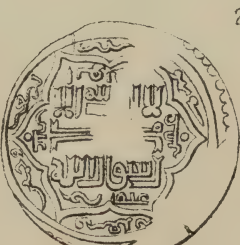
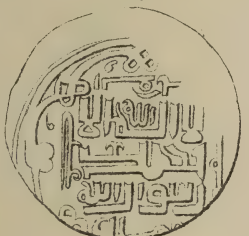
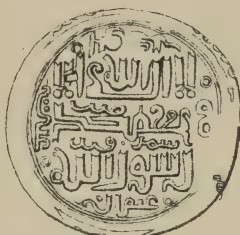






COINS OF THE CHAGHALTAI MOGHALS.





COINS OF THE CHAGHALTAI MOGHALS.

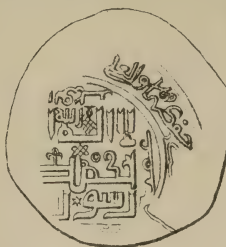




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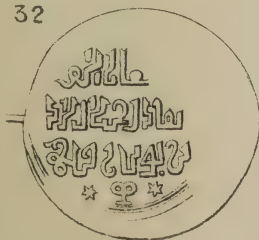
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COINS OF THE CHAGHALTAI MOGHALS.



# JOURNAL

OF THE

## ASIATIC SOCIETY OF BENGAL.



Part I.—HISTORY LITERATURE, &c.

No. II.—1891.

*Report on the Boria or Lakha Medi Stúpa near Junagadh.*—By HENRY COUSENS, M. R. A. S., *Archæological Surveyor of Western India.*

(With a Plate.)

On the 27th of January, 1899, I received a demi-official from the Director-General, Archæological Survey, enclosing a cutting from the *Morning Post* in which was given a short account of the opening of a *stúpa* near Junagadh, Kathiawad, by Mr. J. M. Campbell, C. S., directing me to take immediate steps to ascertain what was being done. On the same day I wrote to Rao Bahadur Haridas Viharidas, Divan of Junagadh, and in reply was told that Mr. Campbell had, during the Christmas holidays, commenced the excavation of the *stúpa* in question, and had left instructions with them for its continuance. I then wrote to Mr. Campbell (letter No. 12 of 31st January 1889) asking him what had been done, and what was still doing, and received from him a statement of all that had been done up to that time. In his note accompanying it, he said that, should anything be found, he would be immediately informed, and would try to return to Junagadh for a few days. On the night of the 15th instant, I received a telegram from the Assistant Divan of Junagadh from which I understood that a 'find' had been made. The Assistant Divan, Mr. Ardesir, wrote me at the same time, but the letter did not reach me then, as I started early next day. At Dhola Junction I met Mr. Campbell, and we went together to Junagadh. The next morning we went out to the *stúpa*. But before describing the 'find,' I will try and describe the position and surrounding of the *stúpa*.



At the foot of the southern slopes of Girnar whose precipitous cliffs rise a short distance to the east of Junagaḍh, is a small secluded valley—an amphitheatre among the hills—almost entirely surrounded by the latter. It is about six miles from Junagaḍh, and the only path to it leads for some distance along the course of the river, past the celebrated Áśoka Rock, and crossing an intervening spur, debouches at once into it. It is thickly wooded, and the bush and scrub, with a good sprinkling of larger trees, climb the hill sides to near their summits. At every turn in the path, lovely glimpses of the surrounding scenery are seen through the foliage, and many a charming view is further enhanced by its vivid reflection in an occasional pool in the watercourses crossed in the way. The great rugged sides of Girnar, with its everlasting rocks, kissed by the lingering rays of the rosy sunset, and begirdled with a cloak of varied tinted foliage, now fading into the softest pearly greys, is a picture one loves to linger before. Around us, beside this old patriarch among hills, we have in the south-east the heights of Gadesing, crowned by its ruined fort, on the south-west Dátár-no-dongar, with the hills of Mákhán Kundi, Taktakgiyo, Sazadiári, and Pavandhoda between, and the low pass on the eastern slopes of Girnar known as Súrya-kundki-godi. In the middle of this beautiful valley, then, thus cut off from the outside world, upon a rocky knoll, stands the great mound known as the Boria *Stúpa* or the Lakha Medi (the abode of Lakha). The ground on every side between it and the western edge of the valley is strewn with fragments of bricks, and here and there are small mounds which look much like the remains of little *stúpas*. Directly eastward of the big *stúpa*, and on the eastern edge of the valley, is the small temple of Bor Deví, so called from the Bor trees which surround it.

On our arrival at the *stúpa* we found that a relic casket had been unearthed. The digging that led to its discovery is described in Mr. Campbell's notes attached, from which it would appear that the depth of the casket from the summit of the mound was 39 feet. During the excavation the top of the mound had been cut off to a depth of 22 feet, and a trench 20 feet wide at the top had been driven from the east straight into the centre. The sides and floor of the cutting shew, that the whole *stúpa* was built of close horizontal layers of good brickwork in herring-bone bond, and it is a solid compact mass. The bricks are of the old Buddhist type, measuring 18" × 15" × 3". Whatever the state of the upper portion, which has been cleared away, may have been, the lower part now standing is solid enough to allow a perpendicular cutting to be carried down without fear of the sides falling in.

During the excavation various slabs and fragments of sculptured stone (Junagaḍh freestone) were met with, most of them having been

found about the vertical axis of the mound. They were numbered as found, but owing to no plans or sections having been plotted as the work progressed, there was some little doubt as to the positions of some few fragments. The two great heavy rail slabs were no doubt placed in the positions in which they were found for the purpose of the better securing the relics from any burrowing thief. The others were probably put in without any special purpose.

Before describing these fragments it will be as well to revert to the relics. See Plate V. On our arrival at the mound on Monday, the 18th February, we entered the trench and found the stone coffer, with its lid upon it, standing on one side (west) of its original bed. As far as could be seen, it had been placed in the vertical axis of the mound, and, from measurements taken by me, and the statement that it was at a depth of 39 feet from the original top, I conclude that it occupied a position in the centre of that axis. On finding the box, Mr. Ardesir had it lifted to one side to see if there was anything beneath it, but he kept its bed undisturbed so that we could see how it was placed. From the discovery until we arrived a day or two had elapsed, during which time the coffer had been left standing in the trench under a guard, but had not been sealed or otherwise made fast. This outer receptacle consists of two blocks of white free stone, one upon the other, the upper serving as a covering to the lower. The block had been placed, so far as I could see by the marking of the bed, with its sides facing the cardinal points. Upon lifting off the upper slab we found a small circular well in the upper side of the lower stone, closed by a thin circular slab which rested upon a shoulder inside round the top of the well. On lifting out this little cover, whose top was flush with the top of the slab, we found inside a small stone pot with lid. The shape of the lower part of this is that of a shallow bowl, while the upper, or lid, was like an inverted saucer with a lip on its underside. This pot was very nearly as big round as the well in which it was placed, and it was with some little difficulty got out. The bowl or the lower part of the pot is perfectly plain, but the top has, by way of ornament six concentric grooved circles. The material out of which it is made is a dull red claystone, and the whole has been turned very neatly upon the lathe. This is evident from the circles, where the tool in its progress round has very slightly chipped or serrated the edge of the circles. A curious thing about this pot, and which will be noticed again presently, is that the lid does not fit the bowl, being too big for it, its lip overlapping and resting on the inner edge of the bowl instead of dropping into it. Within the well, surrounding this pot, was found a small quantity of gritty powder.

In the stone pot was found a little copper pot in two parts like

the last—bowl and lid. Thus far had the pot been opened by Mr Ardesir before our arrival. The copper pot being encrusted with green verdigris was not so easily opened, and the further opening of the vessels was entrusted to me. To open the copper pot, I had to insert the blade of my penknife between the lid and the bowl, and by gentle leverage force the former off. The general shape of the copper pot is that of the stone one, being slightly rounder. But it has an addition of a little drum-like protuberance forming a kind of handle to the lid. When the copper pot was opened a silver pot of the same shape was found within, while underneath it, and between it and the sides of the copper pot, was a dry brittle substance covered with verdigris. This, on close inspection, has the appearance of compressed vegetable matter, bearing the impress of the silver pot on it. It looks as if some green (moist) grass-like vegetable had been put in, and the silver box added and pressed down upon it. Its moisture had greatly corroded the inside of the copper vessel up to a line above the junction of the lid. Beyond this, the interior of the dome of the lid was not corroded, being apparently protected by the intervening silver box, and this part had a purplish metallic sheen which is probably the result of fire when heating out and shaping the lid. The corrosion had eaten a considerable hole in one side of the bottom of the bowl.

The silver box was quite bright. The only difference between this and the copper one being in the shape of the knob on the top which has a narrower waist at its junction with the top of the dome of the lid. This, on being opened, revealed a bright little gold box. Between the two was a small quantity of very light knobbly brown stuff which on close examination and under a low power microscope appeared to have a distinctly fibrous texture. To me it appeared to be a mouldy or fungus vegetable matter.

Great interest and curiosity now centred round the opening of the gold box, and the lid was removed amidst much speculation as to its contents. Its shape differed from the others only in the shape of the knob on the lid which was here conical. In the box we found the relic and a few grains of coaly grit, accompanied by the usual five offerings, in this case comprising an aquamarine (?) bead, a ruby, a sapphire, an emerald, and a small piece of dry twig or white coral with a smaller chip of the same. The relic upon close examination seems to be a small chip of stone that has been under the action of fire. It is a flake about  $\frac{2}{3}$  of an inch long by  $\frac{1}{4}$  of an inch broad, of a dull yellowish drab colour with darker smoky stains. Its surface is cracked all over as if by fire. Under the microscope the surface appears to be covered with fine grains of sand of various hues and dimensions. A lower power shews



the surface as blocks of rock with the rifts or fissures (the cracks) filled with gravel. It is most certainly *not* bone, nor does it appear to be burnt clay, unless it has been burnt into hard stone ware. The gritty substance under the microscope looks like lumps of coal of various sizes, and to the naked eye as a few grains of different sized gunpowder. The bead which is the largest jewel, is in cross section triangular with rounded corners, one side being much longer than the other two, which, themselves, are unequal. The bead, in its length, has thus three faces. The hole has been drilled from both ends, which is evident from the meeting in the centre not being quite true. It is transparent, with a slightly, but decided, green tinge, and Mr. Campbell thinks it an aquamarine. It may be crystal. The ruby, which is ruby-coloured by reflected light, is of the colour of strong tea by transmitted light. It is in the shape of a very flat cone, the diameter of its base being about  $\frac{3}{16}$  of an inch. The sapphire is a deep blue by reflected, but a lighter blue by transmitted light, while the emerald is light opaque green. These two stones are smaller than the ruby, the emerald being the smallest. Now we come to the last article, which has all the appearance of a piece of dried twig, though perhaps a trifle heavy for such. It is about  $\frac{5}{8}$  inch long and nearly  $\frac{1}{4}$  inch in diameter. The outside is covered with fine parallel lines or scoring, running with the length of the substance, and on it are one or two eyes where leaves or small branches may have been attached. It is of an uniform grey tint. The fractured ends or sections do not, however, shew any woody texture, but is more solid looking. In the five offerings made to images, and at the consecration of Hindu temples, the coral always forms a fifth with jewels, but then it is generally the red coral. It is not unlikely that this may be a piece of coral too, but of the white kind. The nature of the bead requires a professional opinion to decide. The usual five offerings in Hindu shrines are—a diamond, a ruby, an emerald, a pearl, and a piece of coral.

The relic boxes were carefully examined, but no trace of inscription or of single letters could be found, nor has any coin been discovered. We are thus still without any clue to the age of the stúpa, unless we get it in the fragments of sculptured stones which may yet be excavated. On the 20th the relic boxes and the contents of the small gold box were photographed full size.

The excavation is still being continued, and when we left the mound on the evening of the 19th, a well had been sunk in the brick work to a depth of 8 feet below the centre of the position, where the coffer stood; but without anything more being found.

The sculptured stones that had been found are themselves full of interest, and if the remaining portions of the structure of which these form



part can be discovered, the trouble and expense in getting at them will be amply repaid. The top member of the Tee or triple umbrella is a huge heavy slab one foot two inches thick. The edges round are broken away, but one image mortise remains at one corner, 3 feet 4 inches from the centre. The centre of the slab is pierced with a large round hole, 1 foot  $3\frac{1}{2}$  inches in diameter, to receive the stem of the umbrella. Three-fourths of the entire rim of the great umbrella were found, and they all piece together remarkably well, and give a diameter of 10 feet and a thickness of 1 foot. Four fragments of the four supporting images (one of each) have also been found, and the tenons under their feet correspond with the mortise in the top of the Tee. In the lower edge of the umbrella rim are the corresponding mortises to receive the tops of the images. The underside of the umbrella is slightly hollowed out. The whole was originally in one piece, but as yet the central parts and the remaining fragments of the rim have not been found. Nearly half the collar, however, with portions of the two upper ones, of different thickness, have been excavated. The holes in these decrease in size. Portion of a smaller figure, probably from the second tier, has been recovered. In the top of the big umbrella are four mortises immediatly above those below, but near the centre, for the feet of these upper images. In the edge of the umbrella small holes are drilled through half way, between the images and about  $\frac{5}{8}$  inch diameter, apparently intended for hangings or the sticks of small flags. There are many other fragments and slabs whose original use cannot as yet be definitely determined, but in addition to these are the fragments of two lengths of rail slab, 8 feet 3 inches by 3 feet  $5\frac{1}{2}$  inches. These have long tongues at either end to fit into long mortises in some supports not yet found. The surface is carved into uprights with three bands of rail running through them. On the upright struts are incised central circles with a half circle at top and bottom. The length of these slabs is the length of a side of the original polygonal railing round a *stúpa* or structural dagoba.

The question which now requires solution is, whether the triple umbrella was an erection over a previous *stúpa* or over a structural dagoba. That it was never erected over the present *stúpa* is self-evident from the positions in which the fragments were found. If a larger *stúpa* existed on this spot, it is very unlikely that it would have been pulled down and rebuilt. It would have been repaired if necessary or an outer casing added. It is my opinion that a structural dagoba existed probably on this spot *before* the *stúpa*, and the triple umbrella being so top-heavy fell and was smashed as we find it; and in this was enshrined the present relics. Finding how unstable this arrange-

ment was, the Buddhist determined to build the present *stūpa*, and the fragments of the old dagoba, which had to a certain extent become sanctified by its use as a relic receptacle, were buried in the mound. I should thus not be surprised, if the bulk of this original structure be found at the ground level, being thrown in to help to get the required height for the relic coffer.

It has been decided to carry on the excavation to the rock; and I estimate that there are 35 to 40 feet of brick work between the position of the coffer and the foundation. I have advised that a well be continued down through the centre, a sloping approach being made to it from the east along the present cutting. Then, if necessary, the cutting east and west might be carried straight through the mound down to the foundation. If nothing is found, then it will be needless to demolish the mound in the chance of finding anything in the two halves. If, on the contrary, my suppositions are correct, and the remains of some structural dagoba be found scattered through the mound then nothing is left for it but to clear away the whole.

At a point in the mound at about 4 feet from the coffer, and on the same level, was found a handful of broken chips. These were the fragments of a pot of exactly the same material as the stone pot containing the relics, and on piecing some of the fragments around the lip of the cover of the latter they were found to lie evenly to it and to have exactly the same curve. I have already mentioned the little trouble we had in getting the stone-pot out of the well, which was a good deal deeper than it, there being hardly enough room round about it to get the fingers in. The inference I draw from this is, that the original bowl, of which the present lid was its cover, is now represented by these fragments. The accident probably happened thus. After enclosing the copper box within the stone pot, the latter was being let down into the well, when, from the small diameter of the latter the priest's fingers slipped from the bowl to the lid. The bowl fell into the well and got broken while the lid remained in his fingers. The fragments were then taken out and cast aside, and a new bowl obtained which did not quite fit the lid. The immense pressure of the mass of brick work above reduced the fragments to chips as we find them. But the amount of these is quite sufficient to build up a complete bowl as large as the whole one.

It is curious that no heads of images have as yet been found.

I have not been able to revisit the *stūpa* since my first visit, but have been informed that nothing of any consequence was found upon further excavation.

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*Notes on some Kolarian Tribes. No. II.\*—By W. H. P. DRIVER.*  
*The Koroas.*

*Habitat.*—Koroas are to be found scattered over various parts of Chuṭiyá Nágpur, from Palamu in the north down to the most south-western of the Native States. They are in various stages of civilisation, from the Birhor-Koroa of the jungles to the cultivator on the plains who prefers to call himself a 'Kisán.'

In Palamu they call themselves Korea-Munḍas rather than Koroas, and in Sirguja and Jaspur they like to be called Paharias, the name Koroa being looked upon as a term of reproach.

*Language.*—As usual when branches of any tribe become isolated, the Koroas in different districts have various dialects, and the following are a few samples of differences between the Baroai and Manipat Koroas.

| <i>English.</i> | <i>Baroai Koroa.</i> | <i>Manipat-Koroa.</i> |
|-----------------|----------------------|-----------------------|
| White ant       | ... Bunumku          | ... Santi.            |
| Bear            | ... Nunikmai         | ... Bana.             |
| Blood           | ... Chala            | ... Balgi.            |
| Bone            | ... Kod              | ... Jang.             |
| Body            | ... Harom            | ... Sindir.           |
| Cloth           | ... Pagi             | ... Sonhe             |
| Hair            | ... Silik            | ... Ub.               |
| Thigh           | ... Bul              | ... Tob.              |
| Lie             | ... Lobra            | ... Buri.             |
| Mouth           | ... Totna            | ... Ah.               |
| Rice (cooked)   | ... Kode             | ... Jow.              |
| Word            | ... Balda            | ... Barra.            |
| There           | ... Inandera         | ... Hona.             |
| Far             | ... Sanging          | ... Langka.           |
| That            | ... Man              | ... Mader.            |

*Traditional and Conjectural History.*—The Koroas like other wild tribes know little of their own history, but they have traditions about the Mahádeo Hills, and the same fiction as the Asurs about their origin, *viz.*, that they are sprung from scarecrows. Their traditions also connect them in a distant way with the Korkus, Kurs, Saonts, Asurs and Beonarias.

When these aborigenes were driven south by the Aryans they appear to have been generally known amongst themselves as Kors, their word for man. The more eastern branch of the Kolarian race was in those

\* [Continued from Vol. LVII, p. 7, of 1888. ED.]



days evidently known as Horo. To this day the members of the eastern branch can be distinguished by the use of H, where those of the western branch use the letter K. From the remains of brick and stone temples, it would appear that in ancient times small communities of Aryans used to settle amongst these aboriginal tribes, perhaps at first as conquerors, but afterwards on a more familiar footing, until with the lapse of time they became absorbed in the Kolarian population. Traces of mixed blood are plain enough amongst the population of this part of the country at the present day.

*Authentic history.*—The earliest historical fact we have in connection with the Koroas is, that in 1818 A. D., when Sirguja and Jashpur were ceded to the British by Appa Sahib, the Koroas, under a chief named Manawar Sing, were at war with the Rája of Sirguja. Then in 1857 the Koroas of Sirguja went into open rebellion against the British Government, and one of their chiefs Dharam Sing was hanged after we regained the country. Again in the beginning of 1884 this same tribe (probably owing to scarcity) took to highway robbery and murder. The ring-leader on this occasion was one Katra, and he and three others, named Bandhan, Jitu and Ledra, were tried and hanged at Ranchi. Of the others implicated, two more, Dunde and Punea, were transported, and another Bandan received five years' imprisonment. It is said that in years when the hill Koroas crops were scarce, they used to pay a visit to the Rája in a large body, armed with their terrible bows, arrows and battle-axes. The Rája in those days was only too glad to get rid of them by ordering a general subscription for their benefit. Alas! now, gone are the days of "the good old rule, the simple plan," and the British are here to maintain law and order.

*Divisions.*—The Koroas are divided into several sub-tribes, the Pahariá or Bor-koroas, the Birinjia-koroas, the Birhor-koroas, the Koraku-koroas, and the Koria-munḍas. All live amongst the hills and jungles and speak dialects of the Kolarian language. The Dand-koroas or Dih-koroas and the Agaria-koroas live on the low lands, and speak only a dialect of Hindí.

*Food.*—In the way of food, Koroas of the hills can eat goats, pigs, fowls, cows and buffaloes, but not snakes, or frogs or lizards. Only Birhor-koroas can eat monkeys. They all eat various jungle products, and many of them know of the medicinal properties of herbs, roots &c., to be found in their jungles. The following are the names of a few such medicines, viz., Churaphal, Gethi, Bhourmali, Barkajeri, Harraphal, &c.

*Religion.*—Koroas employ three kinds of priests, who must, however, all be Koroas. The Pahan-Baiga is the head priest, the 'Pujár' is his



assistant, and the Dewar is the consulting priest. They also have Ojhas, Dains and Motis, *i. e.*, wizards, witches, and sorcerers, who deal with various kinds of spirits, and work on the superstitions of the people. The mediumistic powers of such people are supposed to be innate. Koroas worship the sun. Once a year in the month of November, the religious-minded Koroa goes out by himself, before dawn, to meet the rising sun, and without the assistance of a priest, he offers up a sacrifice of a white cock, upon an open field. The priests offer their sacrifices under the Sarna of sal trees, which is to be found near every village. Darha and Darhin are worshipped in the Sarna, and the hinduised Koroas of the plains worship Kálí in a temple. A red or spotted cock is offered to Darha and a red hen to Darhin, and to these are added a little 'Handia' or native rice beer, which the soul of the Koroa loves. There is also a Paht Deota or hill god who eats red cocks. On occasions of distress the Baiga offers an oblation of milk to Kálí. The goodwill of 'Arha Buhi' (their ancestors) is invoked on any occasions of moment.

*Festivals.*—At the 'Phagna' festival, in March, a 'simal' (cotton tree) branch is planted on the east side of the village, straw is tied on the top of it, and then set fire to. After drinking and dancing round this, the Baiga cuts off the top with a 'balua' (battle-axe). He then takes and sticks it over his own door, and offers a sacrifice of a spotted fowl, and some bread made of rice flour. This festival lasts for two days, and they dance the 'Tharia' and 'Jhumta. The 'Sarhul' festival, in April, lasts four days, a red cock and hen are sacrificed and they dance the Jhumta and Chandrani. Once a year, in the month of July, the Pahan sacrifices to Kálí a 'khassi,' goat which the whole village subscribes for. At the 'Nowa' or first crop festival in September, the dances are Chandrani and Desoari, and only a hen is sacrificed by the Pahan, but after the harvesting is over, every Koroa household offers a thanksgiving sacrifice of a red and white hen to ancestors. The 'Sohorai' or cow festival, in September, lasts four days, and two red cocks are the proper sacrifice on this occasion. At the 'Dassain,' in October, the Diwan of Khuria sacrifices a 'khassi' goat. The Karma festival, in October, lasts two days. The villagers cut a branch of a karam tree, plant it in the middle of the 'akhrá,' or dancing-ground, and drink and dance round it. At this the Chandrani is the proper dance.

*Marriage ceremonies.*—Although Koroas do not marry until they are grown up, their marriages are often arranged by parents. The would-be-husband has always a say in the matter, and in his eyes, working-capabilities are the chief beauty in a wife. Koroas are divided into

several families, each of which is known by its 'gotor,' and no two people of the same gotor are allowed to marry. The gotor stands for our surname. An orthodox marriage is conducted as follows. First the betrothal is formally gone through by the parents of the bridegroom, taking to the parents of the bride two 'kalsis' of 'daru' or native liquor made from the 'mahwa,' and settling the price of the girl, which is generally about Rs. 5. The young man goes with his parents next time and takes besides the Rs. 5, a 'khassi' goat, a piece of cloth for his intended, and another for his future mother-in-law. On the wedding-day a feast is given at the house of the bridegroom's father to which all relatives and friends are invited, and a party of the bridegroom's friends go and bring the bride. A person called an '*aguait*' arranges all the ceremonies. The clothes of the bride and bridegroom which have previously been dyed yellow are tied together by the 'Lokundis,' who must be unmarried people. The 'Lokundis' are the bridesmaids and bestmen. The bridegroom then puts 'sindur' on the bride's forehead, and the '*aguait*' throws a fist-full of uncooked rice on the ground. The happy pair then go and *salaam* to their parents and to the assembled company. They then seat themselves between their parents, and the husband puts bangles on his wife's wrists, and anklets on her feet. The company then begin to eat and drink, and afterwards the young people commence their dancing, which is kept up all night. The next morning, after a final drink, all the party go and bathe, and then leave the happy couple to their own devices.

*Marriage customs.*—A Koroa can marry a second wife, if he has no children by his first, or if his first wife leaves him, or if he is divorced from her. If his wife leaves him, he can get back her price, from her parents or guardians, and this is as good as a divorce. Widows can remarry, and a man who marries a widow or divorcee is called a 'Biyáhur.' If a man leaves his wife without a cause, she can call a 'pancháyat,' and have him find Rs. 5. When young people marry without their parents' leave, it is called a 'Dhuku.' The relatives then hold a 'pancháyat,' and make the young man give a 'khassi' goat and two 'kalsis' of 'daru,' for their benefit.

*Birth customs.*—For about a week or ten days after a birth, the mother is considered unclean. Children are named a month after they are born. They are only named after their grandparents, when the mother dreams of a visit from the said ancestors. If a girl is to be born, the woman dreams that either her own or her husband's mother came with offerings of 'tarpat' earrings or beads; but if a boy is expected, she dreams that either her own or her husband's father came with an offering of a 'dibi' or a 'batua' (small brass pots for eating out of).

The child is then called its grandparents' 'aotár,' and is named after the said ancestor. A big feast is always given at a christening. Boys are preferred to girls.

*Young people.*—Boys are burnt on the forearms, when they are about ten years of age, but girls are not tattooed like Muṇḍas, Kharias and Uraons. Property descends only to male heirs. Every large village has its Dhamkuria or bachelor's quarters, for boys who are too old to live with their parents. Girls stay with their parents until they get married. The dancing-ground is usually an open space in front of the Dhamkuria. Young people enjoy considerable freedom until they are married. There are no old maids amongst Koroas. Children take the 'gotor' of their father.

*Death Customs.*—When great persons die their remains are conveyed to the banks of a river and burnt by their relatives. Ordinary people are buried and large stones are placed over their graves. When the Pahan Pujár or Dewar die, their remains are burnt and buried in their own fields. Ten days after a death, the nearest relatives give a big dinner. When a pregnant woman dies, her ghost haunts its relatives and has to be turned out of the village with the assistance of the Baiga.

*Appearance.*—In appearance the Koroas of Jashpur, Sirguja and Barowai are usually very black with flat square faces, and matted locks. Physically they are short but very strongly made.

### *The Pahariyá-Kharias.*

*Habitat.*—The Pahariyá-Kharias have little to boast off in the way of history, and those in the south-west have the same tradition as the Kharias of Lohardagga, viz., that they came from 'Roides' and 'Kharia-ghát.' They are found scattered on the hills in the south of Mánbhúm, in various parts of Singbhúm and Kionjhar, and on the borders of Gangpur and Raigarh, and (as their name implies) they are exclusively hill men. At the foot of the hills in the thickest jungles are found the Perai-Kharias, who are said to have been outcasted by the hill men, and with them are also found the Makria-Kharias, both these tribes being gross feeders. The Makria-Kharias eat monkeys, and thus stand in the same position to the Kharias as the Birhors to the Muṇḍas. It is most probable that in ancient times all the Kolarian tribes ate monkeys.

*Language.*—There is a difference in the language of the hill and plains of one word in twelve, and the following are a few examples:—

| <i>English.</i> | <i>Plains-Kharia.</i> | <i>Hill-Kharia.</i> |
|-----------------|-----------------------|---------------------|
| Cloth           | ... Lutui             | ... Sirak.          |
| Fever           | ... Ghorna            | ... Tonor.          |
| Flesh           | ... Mas               | ... Kumang.         |



| <i>English.</i> | <i>Plains-Kharia.</i> | <i>Hill-Kharia.</i> |
|-----------------|-----------------------|---------------------|
| Foot            | ... Katta             | ... Jura.           |
| Jackal          | ... Tuyin             | ... Karcha.         |
| Monkey          | ... Bandar            | ... Sakoi.          |
| Morning         | ... Meang             | ... Patar.          |
| Plantain        | ... Kera              | ... Kondo.          |
| River           | ... Ompai             | ... Jor.            |
| To-day          | ... Musa              | ... Kone.           |
| Near            | ... Ubdu              | ... Ekor.           |
| Weep            | ... Yamna             | ... Libdana.        |
| Bad             | ... Bekar             | ... Kambo.          |
| Old             | ... Buddha            | ... Kendrubo.       |

*Divisions.*—There are two tribes of hill Kharias, the ‘Pahariyá’ and the ‘Neosa.’ The Pahariyás are the more civilized, being more fastidious as to their food, and wearing cloth, while Neosas are said to eat cows, and animals that have died of disease, and most of them wear only leaves. Neither of these tribes can speak any language but their own, but it is only with difficulty that they can understand each other.

*Food.*—Pahariyá-Kharias eat buffaloes, sheep, goats, pigs, fowls, &c., but not cows, tigers, snakes, lizards, &c.

*Religious Festivals.*—In religious ideas the Pahariyá-Kharias are wonderfully advanced. They worship the Sun, ‘Giring Pújá,’ every two or three years, in the months of June or July, the head of every family doing his own pújá, on a bare rock, and offering a white cock, a white goat, or a white pig, according to his circumstances. Every village has its priest, or ‘Kalo,’ who must be a Kharia, and his sacrifices are to be made at the ‘Sarna’ or Jangkorbo. In February there are three festivals. At the ‘Phágun’ festival each household offers its own sacrifice. At the Jangko festival, the Kalo offers a sacrifice for the whole village. This festival is kept in honour of the Mahua and Mango, which fruits are then in season. Then there is the ‘Lamlam,’ or hunting festival, at which the Kalo again officiates for the whole village. At all these festivals the ‘Tharia’ is the fashionable dance. In June each household offers its ‘khidori’ sacrifice. In September the ‘Kalo’ offers the ‘kadoleta’ sacrifice, at the cutting of the upland crops. At the ‘Karam’ festival, in September, the young people of both sexes offer sacrifices at the akhrá, or dancing place. In October the ‘Kalo’ offers a sacrifice at the ‘Kharra Pújá,’ of a brown khassi goat, and three cocks and one hen of different colours. The ‘Bandai’ festival is kept in October, and at this they dance the ‘Jadura.’ They dance, the ‘Desaoli’ in May and June and the ‘Jadura’ in October, November and December. In the months of February and September each house-



hold offers a sacrifice to its ancestors, who are supposed to act as guardian angels to their living relatives.

*Demons.*—It is the 'Kalo's' duty also to keep an eye on the various malignant spirits that haunt every Kharia village, and to propitiate them when necessary. The following are the most common of such evil spirits: The 'Pahto-Dubo' or horse demon. The 'Dorbo-Dubo' or elephant demon. The 'Gorea-Dubo' or fire demon. The 'Raksa-Dubo' has a man's body with big protruding teeth, and he carries a rod with a noose at the end of it, for catching people with, a big basket to put them into, and a hatchet to kill them with. He can only be appeased by the offering of a ram. Then comes the 'Gumi-Dubo,' whose proper sacrifice is a cow. When sacrificing to these demons, the priest kills the animal, whatever it may be, and runs away. The other evilly disposed spirits are the ghosts of women who have died while pregnant, called 'Churil-Dubos', and the ghosts of people who have met with violent deaths, called 'Jianth-Muahs'. These sometimes go about screaming or crying at night, and they inhabit large trees by the roadside, and pounce down on people who do not offer sacrifices. They frighten and sometimes kill the unfortunate wayfarer. The 'Pahariyá-Kharias' also personally offer sacrifices to the 'Baranda-Dubo' who lives in ant-hills. The sacrifice for this demon may be a buffalo, a ram, or a pig.

*Good Spirits.*—All the gods of the Kharias, however, are not evil. There are two great good spirits named Dhowlagir and Mainagir, and these have several spiritual apostles, who do their bidding. Three of the said apostles, known to my informant, were named 'Deogan-Guru,' 'Lugu-Guru,' and 'Mado-Mantri. Some 'Pahariyá-Kharias', known as 'Deonra-Lebus' or 'Motis', can invoke the above mentioned good spirits, but only for good purposes. The ceremony is as follows: The 'Deonra-Lebu' takes a 'samu' or bamboo fan, in which he puts some rice, and he places a small light in front of him. He then begins to rub his hand over the rice, and to invoke the good spirits with the following chant—

"Come, come along, on the road I will make you sacrifices.

"Here I stand, your priest, cause the sick man to be set free, and I will give you sacrifices.

"Keep me (as your Deonra Lebu), and at the head of the waterfall I will make you sacrifices.

"Make the sick man stand up, walk and work, and then will I give you sacrifices."

If the sick man recovers, the 'Deonra-Lebu' knows that Dhowlagir and Mainagir have granted his prayer, and he gives his sacrifices according to promise.

*Witches.*—But should the person die, and there be the slightest suspicion of the existence of a wizard or witch in their midst, the Deonra-Lebu again calls the good spirits to his assistance, and sees the wizard's or witch's face in the light that is set before him. He then tells the 'Re,' or head of the village, who calls up all the villagers and explains the circumstances. The unfortunate wizard or witch is then turned out of the village, with much bad language and rough treatment. If any resistance is offered, the offensive person is beaten and sometimes killed outright.

*Marriage customs.*—'Pahariyá-Kharias' only marry when they come of age, and widows or divorcees are allowed to remarry. They may marry two or more wives, but very few ever do so. They must, however, only marry with other Pahariyá-Kharias, and the parties to the marriage must be of different 'gotors' or septs. The following are a few such septs, *viz.*, 'kiro' tiger, 'dungdung' eel, 'bilung' salt, 'baa' dhan, 'kerketa' a bird, 'soreng' stone, 'kulu' tortoise, &c. Pahariyá-Kharias have no 'dhamkuria' or bachelor's hall, but they have an 'akhrá' or place for dancing. Marriages take place at the home of the bridegroom, outside of the house. The groom has to pay the girl's father a present, called 'gining.' This is not paid in money but in cattle. A fair price for a wife is two buffaloes, or seven heads of cattle. All friends and relatives are invited to the marriage feast. The bridesmaids anoint with oil the heads of both bride and bridegroom. The bridegroom then puts sindur on the forehead of his bride, and she returns the compliment. The best man then splashes them both with water, and the ceremony is complete. The happy couple are then carried about, by two strong men, to receive the congratulations of the company. After this the party sits down to eat and drink, and the rest of the night is spent by the young people in dancing, and by the elders in drinking. Next morning they all go and bathe together, in the nearest river or pond. When a man cannot afford to have a ceremonious marriage, he marries without ceremony, and this is called a 'dhuku' marriage. If married people cannot agree, they are at liberty to separate and to remarry with others if they choose.

*Regarding children.*—All property descends to male heirs. After child-birth the mother is considered unclean for six days, and during this time she must live and eat in a separate room by herself. The child is named when it is a month old. To find an auspicious name, grains of rice are thrown into a bowl of water, as each name is called, when all the grains come together at the bottom of the bowl, the last mentioned is the proper name. When boys reach the age of 8 or 10 years, they have their forearms burnt. Girls at about the same

age are tattooed (by 'Malar' women) on their foreheads and temples, never elsewhere.

*Regarding the dead.*—The rich burn and the poor bury their dead. Dead people turn into ghosts, and these live chiefly near their burial-grounds. When a person is dying, all the ghosts in the neighbourhood get round his deathbed, and dance and make merry, for a new 'muah' or ghost is about to be born to them. People on the eve of death can see such ghosts, and then they know their time has come. The ghosts of people who die a natural death are quite happy, and do not molest the living.

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*The Sobors or Savaras.*

*History and traditional references.*—The Savaras (a numerous section of the Kolarian race) are the southernmost of any of the aboriginal tribes who still speak a Kolarian language, and they have maintained their distinctive title from very ancient times. There is an inscription cut on the rock at Girnar in Gujerat from which we learn that Rudra Dáma (one of the Sah kings about 300 B. C.) conquered the Savaras and other wild tribes; and the Savaras are also referred to in the Puráṇas as a wild tribe in the south-east. Ptolemy mentions the Sabaræ, and Pliny speaks of a tribe of Suari. Martin in his *History and Antiquities of Eastern India*, says that a large tribe of Siviras are traditionally reported to have existed and flourished in Sháhábád and Bihar contemporaneously with the Cheros, but there are none in those districts now. However Sherring in his "Tribes and Castes of India" states that a tribe of 'Seoris' who were in former times much mixed up with the Bhars, Cheros, Kols and Kharwars, were once established in Ghazípur and Mirzapur, and that a few are now to be found in Central India. "These people much resemble the Gipsies of Europe. Their women wear a tartan dress and often have a kind of horn projecting from the forehead as an ornament. They live in light and easily-moved booths made of grass and reeds, are fond of intoxicating drinks, and eat the flesh of swine and oxen. They procure wives for their young men by kidnapping female children, and live principally by jugglery, coining false money and theft."

*Mythological and Historical references.*—It is difficult to say whether these 'Seoris' are a branch of the Savaras of the south or not. A Mahábhárata legend says that the Savaras were created from the excrement of the wonder-working cow "Nandini," which belonged to the hermit 'Vasishtha,' who employed them to punish a Kshattriya king named



“Viśva-Mittra” the son of Gadhi, king of Kanauj. From this legend it might be inferred that the Bráhmans employed an army of Savaras, (whom they imported from the south) as mercenary soldiers to fight on their side against the Rájpúts of Kanauj. These Savara soldiers would naturally leave their wives behind, and this would account for their almost total extinction, and for the necessity for their young men to procure wives from other tribes. The Cheros and Kharwars with whom the Savaras were associated are still very numerous and prolific in Mirzapur, Sirgúja, Palamu and other neighbouring districts.

*Geographical Distribution.*—In Sambalpur, Orissa and Ganjam the Savaras are found in various stages of civilisation and adopting various languages and customs according to their surroundings. In Ganjam they speak a mixture of the Kolarian and Dravidian languages and are known as Sonds, Sowras, Jara Savaras, Luda-Savaras, Arisa-Savaras and Tekkati-Savaras. In the Native States of Orissa and in parts of Sambalpur they speak dialects of Uriyá and are divided into the following sub-tribes, *viz.*,—

*Divisions.*—Sowras or Saondas, very hinduised cultivators. Taalas, very hinduised cultivators. Bentkars, hinduised, and weavers by trade. Ludhas, hinduised, and blacksmiths and ironsmiths by trade. Kella-Sobors or Potor-pinda-Sobor, the men are musicians and the women dancing-girls. It is said that in former times their women only wore leaves.

*Sub-division of Sobors.*—The purest representatives of the race call themselves Sobors, and speak a dialect of the Kolarian language which could be understood in Chuṭiyá Nágpur. These people are only to be found in the most jungly parts of the Native States of Orissa and Sambalpur, and a few are also found in Gangpur one of the southern tributary states of Chuṭiyá Nágpur, and the following notes only refer to these Sobors.

They are divided into three sub-tribes, *viz.*,—

1. Pardhea or Jara-Sobors are cultivators and shikaris. They, are sometimes known as ‘Kurus.’ They eat pigs, fowls, goats, fish &c., but not cows, buffaloes, tigers, lizards &c.

2. Potkota-Sobors, boat and string-makers and cultivators. They can eat the same animals as the Pardheas and also buffaloes, but cows are forbidden.

3. Bassu-Sobors are chiefly cultivators. They can eat the same as the Pardheas and also shell-fish.

These sub-tribes cannot intermarry or eat together, but they dance, drink and otherwise fraternize quite freely.



*Septs and Totems.*—They are divided into numerous septs of which the following are a few, *viz.*,—

|                                                      |            |                     |
|------------------------------------------------------|------------|---------------------|
| Saram,                                               | sambar     | cannot eat.         |
| Murmu,                                               | nilgai     | do.                 |
| Barhia,                                              | wild pig   | do.                 |
| Guincha,                                             | tree mice  | do.                 |
| Ir-tirki,                                            | guinea-pig | do.                 |
| Nag,                                                 | cobra      | cannot kill.        |
| Sua,                                                 | parrot     | cannot kill or eat. |
| Toro,                                                | lizzard    | do.                 |
| Hemrom,                                              | a bird     | do.                 |
| Pardhán, a title, the man who reinstates into caste. |            |                     |
| Bisual, a title, the man who officiates at deaths.   |            |                     |
| Nega, a title, headman of a village.                 |            |                     |
| Bhui or Bohi, those who carry palkis.                |            |                     |

No two people of the same sept can intermarry. The wife belongs to the sept of her husband after marriage, and male and female children belong to the same sept as the father.

*Religious Festivals.*—The Sobors who retain their aboriginal customs have priests of their own tribe, who sacrifice goats, fowls, pigs &c. at the village ‘dimur’ or spirit-grove. The head priest is called ‘Turi’ or ‘Jhankor’ and his assistant the ‘Lengena,’ and these offer sacrifices at the following festivals, *viz.*,—

|                                          |               |
|------------------------------------------|---------------|
| Mágh-porob and Mágh-puni                 | in January.   |
| Phagua, Phágun-pun and Gundi-Khia        | in February.  |
| Choit-porob and Choit-puni               | in March.     |
| Boiság porob                             | in April.     |
| Jet-puni                                 | in May.       |
| Assar-porob or Dutia                     | in June.      |
| Rakhi-puni and Pura                      | in July.      |
| Nua-khia, Korma and Ekadasi              | in August.    |
| Tugilosa, Buriusa and Dalkhai            | in September. |
| Kártik-puni, Bhajinta, Pojinta Borousa } | in October    |
| Usa-borot, Kolasi-usa and Kola-Chusa }   | and November. |
| Pús-puni                                 | in December.  |

*Gods and Demons.*—The head of every household is also supposed to sacrifice to numerous gods, of which the following are a few. Gorom-poti, village god. Bonera, hill god. Bons-poti, jungle god. Panch-konda and Peta-bulia, outside gods. Ludha and Ludni, Kandi-bent, Pagura-bent, and Pardhia-bent are household gods. Debí, Mahádeo, Mahábír, Bura-Bhim, Bhogia Bura-Deo are all great gods. Satbohoni and Jolkomoni are water nymphs, and the following are demons of

sorts, Rakas, Bodru, Kalka, Rui bonga, Podmasini Temasini, Bhandar-gohoria, Churguri, Horli-pat and Kondra-pat.

*Dances and Music.*—Sobors have the following dances; viz.,—

Jadura            men and women together.

Karma            do.

Khedapar        do.

Jatra            do.

Kalanga        do.

Biha            do.                    at weddings.

Sudni            only women.

Konkor        do.

Kheldi        single woman of Kela Sobor tribe.

Dond            danced by single man carrying bells on a stick.

They use the following musical instruments: Lepur, Champ, Betbari. The Kela-Sobors use the Khonjini or Ghurka, a peculiar instrument which emits groans and grunts.

*Wedding customs.*—The uncivilised Sobors do not marry until grown up and the price of a wife is usually Rs. 5. Widows and divorcees can remarry, and a divorce is effected by returning the price paid for the wife. The marriage takes place at the man's house, and the bride is borne to the wedding on the backs of the bridesmaids. The bridegroom has to give a cloth to the bride, her mother and younger brother. At weddings Sobors do not dance the war-dance of Chutiya Nágpur, but have a peculiar wedding dance of their own. The preparations for the wedding party are very much the same as in Chutiya Nágpur.

*Marriage customs.*—They have the usual 'Mandua-tand.' Branches of 'Mahua' and 'Sargi' are planted on the altar, which consists of a four-cornered mound of earth, at each of the corners of which are placed water-pots with lights in them, a string being passed round the lot. The ceremony commences by the happy couple holding each other's little fingers and marching seven times round the 'Chounda' or altar, the woman going in front. The two being then seated together, the bridegroom puts a spot of 'sindur' on the bride's forehead with his right hand little finger, and she returns the compliment in exactly the same manner. The bridesmaids then draw near and tie the clothes of the pair together. After this they make the bride promise never to leave her husband, and (as it were to certify to the contract) put a big broad mark of 'sindur' on the bride, reaching from the crown of her head to the tip of her nose. The happy pair then retire into a house prepared for them, while the rest of the party sit down to dinner. After dinner dancing and drinking are commenced and usually carried on until next

morning. Early in the morning the bridesmaids appear to wash the feet of the newly-married couple, the man receiving their attentions first. Sobors are permitted to marry as many wives as they choose, but do not usually have more than one.

*Customs relating to children.*—After childbirth the mother is considered unclean from six months to a year, and the husband has to live and eat apart from his wife, not even being allowed to drink water from her hands; and if there are no female relatives in the house, he has to do all the cooking. To effect a purification an official called 'Pardhán' has to give some drinking water first to the mother and then to the father, and finally to drink some himself, each one drinking out of his or her own hand. Just previous to this ceremony the mother has to bathe. Before the purification, neither the father nor the mother can eat meat. After the purification they have a big dinner to which relatives and friends are invited. In Chuṭiyá Nágpur the 'Pardhans' are a sub-tribe of the Kheroars or Bhogtas. The Sobors do not usually burn 'sika' marks on the boy's fore-arms, as is customary amongst the aboriginal tribes of Chuṭiyá Nágpur. Girls are tattooed chiefly on the biceps. The Kol custom of tattooing on the forehead is practised by a few; but I noticed only old women with these marks, and I therefore presume the custom is dying out. The tattooing is done by the women of the Temna or brass-working caste. Amongst Sobors all property descends to male heirs only. The 'Dhamkuria' or bachelor's hall of Chuṭiyá Nágpur villages is not known amongst the Sobors. The Sobors usually bury their dead and put stones over the graves. The clothes, ornaments and sometimes the weapons of the deceased are buried with them. They believe in the existence of the spirits of the dead and also that they haunt their own homes; therefore at meals it is customary to put aside a pinch of food and some liquor to show the spirits they are not forgotten. Sobors are very superstitious; they believe in sorcery, and people suspected of practising the black art are hated, feared and often ill-treated. A grim sect of these people, known as 'Bisuals,' are the officials whose duty it is to offer sacrifices to the dead. They get paid for their services, and the office is hereditary, so that the Bisuals will doubtless become a sub-tribe in time, just as the Baigas have done amongst the aboriginal tribes in the Western Native States of Chuṭiyá Nágpur. The Bisual sacrifice consists of rice and the gum of the Sarai tree.

*Language.*—The following list of words shows where the Sobor and Saonda differ most from other Kolarian languages.

| <i>English.</i> | <i>Sobor.</i> | <i>Saonda.</i> | <i>English.</i> | <i>Sobor.</i> | <i>Saonda.</i> |
|-----------------|---------------|----------------|-----------------|---------------|----------------|
| Ant             | Juri          | Bobo           | When            | Kote          | Yenga          |
| Boat            | Dhondsa       | Voda           | Bad             | Bogda         | Sedele         |
| Day             | Angiana       | Tamba          | White           | Tele          | Palu           |
| Where           | Kon           | Tenga          | Small           | Dihing        | Doyina         |
| Without         | Guritke       | Vodita         | Thin            | Pandra        | Palapala som   |
| Near            | Hopora        | Yuya           | Hungry          | Raing         | Dolijan        |
| Much            | Birbarang     | Bari           | Be silent       | Atupme        | Kandang ama    |
| What            | Kate          | Vongado        | Hear            | Anjom         | Andangna       |

*Há-shang-rgyal-po and Ug-tad, a Dialogue. From the Tibetan.*

*By KARL MARX, Missionary at Leh, Ladakh.*

(Once upon a time) there was a king named Há-shang, who did naught but sin. (Now), had this king died, he would have gone to perdition; Chom-dan-das, however, had mercy upon him, and transformed himself into a minister called Ug-tad.<sup>1</sup> After he had come into the presence of the king and performed his obeisance, (the king) accepted him as his minister.

(It so happened, that) the king had two wives. Now, the king raised his second wife<sup>2</sup> to (the rank of) the first and gave her the golden crown. The first wife<sup>3</sup>, being jealous, threw the Chhang<sup>4</sup>-cup at the king. The king resented this and gave the command to Ug-tad: 'Go and kill<sup>5</sup> this woman!' Ug-tad replied: 'It is not right to kill the queen for an offence so trifling.' The king (again) said: 'If you will not kill the queen, I shall kill you!'

Then Ug-tad conducted the queen to a grave-yard, and after having made her over to the care of the hobgoblins,<sup>6</sup> he made a sign to her meaning: 'don't be afraid,' and left her.

Thereupon he returned to the king. The king asked: 'Have (you) killed (her)?' The minister said: '(Yes, I) have killed (her).' 'Very well,' said he.

<sup>1</sup> འུག་ཏཱ་

<sup>2</sup> རྒྱུ་མ་

<sup>3</sup> རྒྱུ་མ་

<sup>4</sup> རྒྱུ་ the beer of Ladakh and Tibet.

<sup>5</sup> 'Kill and come' རྒྱུ་ལ་ཞུ་

<sup>6</sup> རྒྱུ་ལྷ་པ་



'Ug-tad,' the king (then) continued, 'your erudition is considerable, and your parts are good. (Tell me then): amongst acts performed by human beings, which are well (done) ?'

The minister said: 'If you do not consider accomplishments of little account; (this is) well (done);

'if you do not look upon learning as being a fraud; (this is) well (done);

'if a rich man keeps his wealth under control,<sup>1</sup> (this is) well (done);

'if a poor man curbs his tongue; (this is) well (done);

'if a woman subdues (her own) body; (this is) well (done);

'if the Tsun-pa<sup>2</sup> fulfils the disciplinary statutes<sup>3</sup>; (this is) well (done);

'if the Ngags-pa<sup>4</sup> keeps the vows<sup>5</sup>; (this is) well (done);

'if the king can govern; (this is) well (done);

'if a man rises above bad report<sup>6</sup>; (this is) well (done);

'if a sick man conforms with the rules of diet<sup>7</sup>; (this is) well (done);

'if all (men) always were successful; (this would be) well;

'Brothers are good companions;

'one's own relatives make good governors;

'father and mother are dear to the heart;

'a wife is pleasant to give one food;

'a neighbour is nearer than a relative at a distance;

'on-foot is swifter than a weak horse;

'vegetables are sweeter than a porridge made of bad grain;

'there's more pleasure in being a spinster, than in having a husband with an evil countenance.'

1 In this and the following 8 sentences, the original always has ཐུབ་པ་ to be able, etc.

<sup>2</sup> བརྗེན་པ་ Priest, Reverend.

<sup>3</sup> འདུལ་ཁྲིམས་

<sup>4</sup> ལྷ་ཁྲུང་པ་ Magician.

<sup>5</sup> དམ་ཚིག་

<sup>6</sup> Orig. ཡ་ཁྲ་ Jäschke, Dict s. v. ཡ་ཁྲ་ leaves the meaning, which is defined by Csoma as given in the text, still doubtful. In Ladakh the word is entirely unknown.

<sup>7</sup> Tibetan dietary rules forbid under circumstances meat (esp. of goats), sour milk, onions, chhang, anything sour, salt, vegetables, cold water, unless after its having been boiled previously; sleep during daytime is also strictly forbidden to any patient.

Upon this the king considered: "A wife is pleasant to give one food,' this is truly said; 'there is more pleasure in being a spinster, than in having a husband with an evil countenance,' is true likewise. Such has been said unto me. 'Again he thought: 'Ug-tad (probably) did not kill the queen,' so he said to Ug-tad; 'for the sake of one single offence, to command you: "kill the queen!" was not right; therefore, if the queen is not dead, I will make over my reign to you, (if) you go and bring<sup>1</sup> her (here).'

Ug-tad said: 'To raise a person from the dead, and to come and bring her (back), is a thing unheard of.'

The king said: 'Is there any means of bringing her to life again?'

Ug-tad said: 'None that I have. Had Your Majesty<sup>2</sup> not ordered me to kill her, I would not have dared to look at the queen [MS. with my eyes]; much less would I have dared to put her to death. If, for instance, you leave a<sup>3</sup> hatchet without a handle in an empty riverbed, then (surely) no wood will be cut. And I, just as little, have any means of bringing her to life again. I, too, was no party in her execution; it was Your Majesty,<sup>4</sup> who put her to death.'

The king said: 'As it seems evident, that the queen is not dead, bring her here<sup>5</sup>!'

Ug-tad said: 'She is dead. This is very much like the stories of the dove and of the hoopoe in times gone by.

'There once were two doves, a married couple, who, in autumn, hid some fine barley in a hole. In winter it dried up and grew less (in bulk). The husband (noticing this) said: 'Wife, thou hast eaten it!' and struck his wife with his bill and killed her. After spring had gone by, however, the hole was full again, and now the dove husband said: '(Indeed,) thou hast not eaten it, stand up!' But his wife being dead, a few maggots only came out.

'Also a hoopoe-couple once found seven peas. In order to eat (them some other time), they dug with their bills (in the ground) and hid (the peas) in the furrow. But the furrow closed up, and they

<sup>1</sup> Orig. ཁྱིེད་པ་ཤོད་ bring and come.

<sup>2</sup> Orig. ཐུག་པོས་ the king.

<sup>3</sup> MS. adds རྩིང་པ་ ? i. e. རྩིང་པ་ sharp, but its entire omission seems an improvement.

<sup>4</sup> ཐུག་པོ་ལྟོ་ཐུག་

<sup>5</sup> ཁྱིེད་པ་ཤོད་

could not find (the peas). (Then) the husband said: 'Thou hast eaten them!' and killed his wife. Next summer, for every pea one flower sprang up, and the hoopoe said: 'Last year's peas, all seven, this year have brought forth the flower Ha-lo, and now many peas will grow. So thou shouldst stand up! don't be long! arise!' But on lifting her up with his bill, a few maggots (only) came forth.

'Similarly, Your Majesty,<sup>1</sup> after having destroyed the queen, said (to me): 'Ug-tad, you are (a) superior (person),<sup>2</sup> go and bring back<sup>3</sup> the queen!' But I say<sup>4</sup>: 'I never committed any mean offence<sup>5</sup>, I never did a sinful act, I never took an unlawful wife, it was not I who killed the wife in question, and she being dead, there is no hope of her ever returning. (As it is), Your Majesty is (undoubtedly) my superior<sup>6</sup>.'

The king said: 'Ug-tad, you should not tell falsehoods, but go and fetch (my) queen!'

Ug-tad said: 'Falsehoods there are many indeed:

'to say: there are five horses flying about, is a falsehood;

'to say: ants go to parched wheat, is a falsehood;

'to say: fish have their hearts in their heads, is a falsehood;

'to say: to a male a boy is born, is a falsehood.'

The king said: 'You are talking absurdities.'

Ug-tad said: 'Absurdities there are many indeed:

'(to say:) winter is naturally getting hot, is absurd;

'(to say:) summer is naturally getting cold, is absurd;

'to reject the advice of a loving friend and listen to the flatteries of an enemy who hates you, is very absurd.'

The king said again: 'You are a disgustingly foul (fellow) !'

Ug-tad said: 'Disgustingly foul there are many indeed:

'the archer's collar is foul;

'the tongue of a man digesting is foul.'

The king again said: 'You are hankering after disease!'

Ug-tad said: 'Hankering after disease, there are many indeed:

<sup>1</sup> ཐུག་པོ་ 3rd, i. e., 2nd person.

<sup>2</sup> རྩོད་རྒྱུ་ཆེ་བ་པ་

<sup>3</sup> བུད་ལ་ལོག་

<sup>4</sup> འཇགས་པོ་ཆེ་པོ་ 3rd, i. e., 1st person.

<sup>5</sup> རྩོད་རྒྱུ་ཆེ་བ་པོ་ལ་ལོག་ i. e., a work of small dimensions.

<sup>6</sup> རྩོད་རྒྱུ་ཆེ་བ་པོ་ཆེ་བ་པོ་

'if a man, not ill, takes drugs, he is fond of disease ;  
 'if a sick man can't submit to régime, he is fond of disease ;  
 'if in winter, a man puts on thin clothes, he is fond of disease ;  
 'if in summer, a man sits down on damp ground, he is fond of disease.'

The king said : 'You want to destroy yourself !'

Ug-tad said : 'Wanting to destroy themselves, there are many indeed :

'one going to combat without armour, wants to destroy himself ;  
 'one climbing a steep rock, wants to destroy himself ;  
 'one crossing a raging torrent, wants to destroy himself.'

Again the king said : 'You wish to die.'

Ug-tad said : 'Wishing to die there are many indeed :

'one walking over a glacier in summer, wishes to die ;  
 'one climbing a tree in winter, wishes to die ;  
 'a fat sheep in autumn, running into a village, wishes to die ;  
 'if a bad man is passionate, he wishes to die.'

Again the king said : 'You are in error !'

Ug-tad said : 'Erring there are many indeed :

'if a man does not guard himself against disease, he is erring, for there is a risk of his being attacked himself ;

'if a man does not guard against cattle-disease, he is erring, for there is a risk of his own cattle-yard being made empty ;

'if a man robs another man's wife from his bosom, he is erring, for there is a risk of himself being killed through the chastisements of the other ;

'if a man takes oaths on things good and evil, he is erring, for there is a risk of his posterity being (suddenly) cut off ;

'if a woman deserts her husband and makes love to another, she is erring.'

The king again said : 'Your power of speech is terrific.'

Ug-tad said : 'Terrific are many things indeed :

'the earth giving way, would terrify the hare ;  
 'the heavens breaking down, would terrify the duck ;  
 'the thing-ril<sup>1</sup> is terrified by the swamp drying up ;  
 'the child,.....<sup>2</sup> having come, is terrified.'

Again the king said : 'You can't keep within bounds !'

Ug-tad said : 'Immoderate are many indeed :

'if a poor man has become rich, he will be immoderate in boasting ;

<sup>1</sup> Name of a Tibetan bird not known.

<sup>2</sup> An omission in MS.



'if a bad companion has been indulging in slander, he (afterwards) will be immoderate in hypocrisy;

'if a vulgar person<sup>1</sup> has conceived a great hatred, he will be immoderate in the use of violent language.'

Again the king said: 'You are (one of those fellows saying :) if only I could, I would be glad.'

Ug-tad said: 'Glad if they could, there are many indeed:

'if one could (avert) the calamities connected with riches, one would be glad;

'if one could (command) the vigour of a country, one would be glad;

'if one could (endure) the talk<sup>2</sup> of a wife, one would be glad;

'if a champion could keep peace,<sup>3</sup> one would be glad.'

Again the king said: '(But) you are saying, I can't!'

Ug-tad said: 'Not able (to do a thing,) there are many indeed:

'one vanquished cannot boast;

'many (at once) cannot govern a country;

'a rich man has no control over his wealth;

'a poor man has no control over his stomach.'

The king again said: 'You don't know shame!'

Ug-tad said: 'Knowing no shame, there are many indeed:

'dress knows no shame; (still) there should be moderation in dress<sup>4</sup>;

'sleep knows no shame; (still) there should be moderation in sleeping;

'the stomach knows no shame; (still) there should be moderation in eating;

'carnal desire<sup>5</sup> knows no shame; (still) there should be moderation in cohabitation<sup>6</sup>.'

Again the king said: 'It is possible to prolong the queen's life!'

<sup>1</sup> ཁ་དམན་ཁྱེས་ a low month.

<sup>2</sup> བྲོས་

<sup>3</sup> ཁྱེ་གས་མདུན་མ་བྲུག་ཀ་—to མདུན་མ་ the meaning of treaty, peace is unhesitatingly and invariably given by my Tibetan assistants; the 'Ge-sar' (MS.) uses it frequently in the same sense, e. g., 'a treaty of five years' duration,' in: ཁྱེ་ལྷེ་མདུན་མ་ (བྲུག་ནས་སྟོང་)—i. e., keep, endure would be more accurate.

<sup>4</sup> It should be worn neither too long nor too short.

<sup>5</sup> འདོད་ཆགས་ cf. the use of the German Wollust.

<sup>6</sup> དེ་བྱས་ཆོད་ ཡོད་ : 'having done it; enough.'

Ug-tad said: 'If it is possible to prolong the queen's life; what is to be done, if she is dead ?

'(Still if you want) to prolong life, there are (means) many indeed :

'if (you) cure a sick man, (you) prolong (his) life ;

'if (you) reconcile men quarrelling, (you) prolong (their) lives ;

'if (you) give armour to men fighting, (you) prolong (their) lives ;

'if (you) point out (to the stranger) the precipice and the water-course, (you) prolong (his) life.'

Again the king said: 'If it is true, that you killed the queen, then death would seem easy to me.'

Ug-tad said: 'Death seems easy to many indeed :

'if a man's family, elder and younger brothers, all have perished at the hands of men, death (seems) easy to him ;

'if one has incurred the contempt of one's equals, death (seems) easy to him ;

'if one is unable to fulfil one's obligations towards friends and relatives, death seems easy to him<sup>1</sup> ;

'if one's opponent in betting has left no pledge,<sup>2</sup> death seems easy.'

Again the king said: 'Although you never learnt all this,—how do you know it ?'

Ug-tad said: 'Things known, though never learnt, such there are many indeed :

'weeping one knows, though one never learnt it ;

'eating one knows, though one never learnt it ;

'lust one knows, though one never learnt it ;

'sin one knows, though one never learnt it.'

Again the king said: 'Although I was taught, yet I do not know it.'

Ug-tad said: 'Things taught, but not comprehended, there are many indeed :

'though you teach the lake where to go backward, yet it will not comprehend it ;

'though you teach the glacier to float downhill, yet it will not comprehend it ;

'though you teach the water (how to tie) a knot, yet it will not comprehend it ;

<sup>1</sup> གནེན་ཐོགས་ཀྱི་ཐུང་མ་ལེ་འཇུག་པ་འདྲི་བ་ལྟ་བུ། translation somewhat doubtful. The translation given in the text is in accordance with the explanation given by Tibetans.

<sup>2</sup> ཐུང་པ་མེད་པ་ལེ་འཇུག་པ་ལྟ་བུ། translation as given is, I think, the one most appropriate.

'though you teach millet seed building, yet it will not comprehend it.'

Again the king said: 'That you should know all this, is most wonderful!'

Ug-tad said: 'Things most wonderful, there are many indeed:

'that the holy Chhos<sup>1</sup> should be preached and expressed in words, is a most wonderful thing;

'Sin renounced and virtue accomplished, is a most wonderful thing;

'Sitting idle and yet to complete (one's redemption) is a most wonderful thing;

'wealth and property heaped up and its crumbling away, is a most wonderful thing.

'Unseen and gracious Lha!

Unseen and terrible phantom<sup>2</sup>!

Untasted yet wished-for delight<sup>3</sup>!

Never partaken of, though sweet nectar!

Clouds undressed yet warm!

Bright sun and moon are without support!

Upon this the king Há-shang, not knowing what else he should say, remained silent, and Ug-tad continued: 'Oh, great king! If you wish for elevation, attend to things that are low.

If you covet happiness, leave aside the causal connexion.

If you covet things near, traverse what is distant.

If you covet victory, put up with defeat.

If you covet wisdom, cultivate your mind.

If you covet Tsun-pa-ship, keep the ordinances.

If you wish for rest, feed your dog.

If you covet learning, leave the 'Chapter<sup>4</sup>.'

If you want joy, do the Chhos.'

(Ug-tad) having said this, the king believed and asked: 'Ug-tad, how must the Chhos be done?'

The minister said: 'The Lama patron-saint<sup>5</sup> must be worshipped

<sup>1</sup> ཆོས་ doctrine

<sup>2</sup> རྩི་ phantom

<sup>3</sup> འདོད་ཆགས་ desire

<sup>4</sup> རྩི་ཐུགས་—ཐུགས་=chapter, no doubt, refers to the རྩི་པ་ཟུང་མ་ 'seven chapters,' the most elementary book in Lamaistic religious literature.

<sup>5</sup> བླ་མ་ཡི་དམ་ Every one of the different Lamaistic sects professes adherence to one such patron saint; notably in Ld: the Sa-skya-pas to Tsan, m. (monastery at Ma-sho), the Ge-lan-pas to Dol-ma, f. (monasteries at: Tikse, Spi-tuk, Sang-kar, Li-kir)

like a Lha. The vow must be held like one's own body. Hearing, thinking must be developed so as to equal the border of the heavens. Thoughts must be meditated upon like the oceans. 'Oh king! trust a loving friend! Cohabitation gives no satisfaction; hence do not allow carnal passion to gush forth like a torrent.

'Of spiteful enemies there will be no end; therefore do not allow hatred to burn like a fire.

'Though this be the period of dullness and error, do not allow ignorance to advance like darkness.

'There should be no talk of one's own attainments; hence do not allow pride to be born like a mountain.

'Other people's want being loss to one's self, do not allow envy to whirl like a cyclone.

'The doing of works never will cease; take up, then, the burden of suffering.

'Of worldly goods enough, is a thing unknown; cut asunder, therefore, the knot of avarice.

'There exists no measure to indicate the time of one's death; hence exert yourself to be pious.

'There is no telling, when death will draw nigh; therefore don't put off (striving after) virtue until the morrow.

'A small sin even is visited with a heavy penalty; therefore do not commit sin at all.

'All men at the first were equal; pay attention therefore to other people's dying and not dying.

'When another (person) dies, do not mourn at his corpse; thyself also must die.

'Nothing else is of use; seize hold of the Chhos, for it is of use in the end.'

The king believed and said: 'Father and mother, though searched never found! Fire and water, needful morn and even alike! Wife though absent, yet to be found!

Needful in the end is the holy Chhos!'

Ug-tad (again) said: 'If you of your own accord have come to believe in the Chhos, then body and intellect<sup>1</sup> both are annihilated by the mind.<sup>2</sup> These and the vanities<sup>3</sup> that are destroyed in the end, are

the Di-gung-pas to Ab-chi f. (monast. at: Sgang-ngon, Yu-ru, Shang.), the Dug-pas to Gon-po. m. (monast. at He-mis, Tchem-re, Stag-na.), the Rgyud-pas to Tsong-Khpa. m. (monast. at Ri-rdzong). All these patrons are said to have been great teachers and saints, either male or female.



(all) illusions. If you know the inner sense,<sup>1</sup> then there remains nothing that could be called death. Virtue or vice, whatever has been done in times gone by, what kind of lives have been led, let their footsteps be your guides. Dear friend ! do what is said in the holy doctrine.<sup>2</sup> Death being certain, do the holy Chhos. As there is no intelligence of our being exempt from death, be diligent and make haste. There is no profit in anything, but strain every nerve and seize hold of the Chhos. (The doctrine of) cause and effect<sup>3</sup> (in the moral world) being true, (accomplish<sup>4</sup>) virtue and renounce sin. Even at the risk of your life, don't throw aside the performance of the moral law. The state of metempsychosis causes weariness to the soul; having left behind the round of transmigrations and cast away suffering, happiness will spring forth.

'On love and compassion a loving heart for ever meditates.

'All—vanity and the inner sense, the two truths take to heart.'<sup>2</sup>

In such manner did (Ug-tad) teach (the king) many things. Thereafter in order to establish him in the faith, he (sent word) to the queen, formerly hidden, (saying) : ' The king — — — — —'

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*Life of Atíśa* (Dīpaṃkara Śrījñāna).—By BĀBÚ SARAT CHANDRA DÁS,  
C. I. E.

Lha Lama Yes'e *hod*, king of Tibet, who held his court at Tholiñ in Ñah-ri was a devout Buddhist. He ruled peacefully over his country for many years. About the year 1025 A. D., he founded the monastery of Thoding at Tholiñ (the lofty place). With a view to introduce pure and undefiled Buddhist monachism in Tibet, he selected seven intelligent lads, each ten years old, and carefully trained them up in Tibetan. Then, with the consent of their parents, he admitted them into the sacerdotal order. When these lads advanced in their study of the sacred books and became

¹ དེཙི་དམ་

² བཞུན་

³ ཐུ་འབྲས་

⁴ MS. དེཙི་བ་སྒྲིམ་པ་སྤོང་ 'throw away both virtue and sin,' seems not to be in accord with the tenor of the previous exhortations; we prefer to insert ཐུ་བས་  
fulfil.

⁵ ཐུང་ད་ཐུག་

initiated in the practice of monastic discipline, he appointed two novice-monks (*S'ramaṇera*) to attend to each of them, and thereby increased the strength of his institution to twenty-one. Not satisfied with the Buddhist teachers of Tibet, whose cult had become greatly debased by the admixture of Tantrik and Pon mysticism, he sent these young monks to Kashmir, Magadha and other places of India where pure Buddhism still prevailed, with a view to their studying the philosophy of Ānanda Garbha of Kashmir and the code of monastic discipline. He commanded them to invite to Tibet, if possible, the renowned Kashmirian Pandit Ratna Vajra and Dharmapāla (the Buddhist hierarch of Magadha) and other holy men whose acquaintance they might make during their sojourn in India. He also instructed them to ascertain if there were any other pandits who, when invited, would be useful to the cause of Buddhist reformation in Tibet. Accordingly they proceeded to India in search of knowledge and holy men, bidding a long farewell to their native country. Though the king succeeded in getting the services of thirteen Indian pandits, it is said, that out of the twenty-one monks whom he had sent to India, nineteen died there from heat, fever, snake-bite and other causes. Rinchen Ḍsaṅpo, the great Lochāva, and Legs paḥi S'erab were the only survivors who had the good luck of returning to Tibet crowned with success. They studied Sanskrit under some of the eminent Sanskrit scholars of India and acquired great proficiency in the Buddhist literature. Bearing in mind the instructions of their royal master, they visited Vikramaśilā to inquire of the S'ramaṇas if there was a saintly scholar in their midst who, when invited to Tibet, would be useful to the reformation of Buddhism. There they heard of Dīpaṅkara S'rijñāna, whose spiritual attainments and learning were of a superior order, and who then occupied the first position among the Buddhist scholars of Magadha. They were also told that he was, in fact, the second *Sarvajña* of the school of 500 Arhats which is commonly called the *Mahāsaṅghika*. The Lochāvas, however, did not venture to ask him to visit Tibet, being told that any such proposal would be premature at this time, if not absurd. On their return to Tibet they submitted an account of their experiences in India, and also of the condition of the Buddhist church of Magadha.

Greatly desirous of seeing the renowned sage of Magadha, the king commanded Rgya-tson-gru seṅge, a native of Tag-tshal in Tsang to proceed to Vikramaśilā, taking with him one hundred attendants and a large quantity of gold. After encountering immense hardships and privations in the journey, the traveller reached Magadha. Arrived at Vikramaśilā, he presented to Dīpaṅkara the king's letter with a large piece of bar gold as a present from his sovereign and begged him to honour his country with a visit. Hearing this, Dīpaṅkara replied :—

"Then it seems to me that my going to Tibet would be due to two causes :— first, the desire of amassing gold, and second, the wish of gaining sainthood by the loving of others, but I must say that I have no necessity for gold nor any anxiety for the second." So saying he declined to accept the present. At this unexpected reply Gya-tson wept bitterly in his presence, wiping his tears with a corner of his sacerdotal robe. He explained to the sage that he was come from the country of Himavat thus far to Vikramaśilā, suffering immense privations, spending much treasure and suffering the loss of many of his companions who died of heat, fever, snake-bite and other causes in the journey, and at last he had to go back to his sovereign depressed at heart and disappointed in his hopes. Dípaṃkara sympathized with him and tried to console him.

On his return to Tibet the Locháva explained to his royal master the circumstances of the failure of his mission and returned the presents. Thinking that it was hopeless to bring Dípaṃkara to Tibet, the king again commanded the Locháva to proceed to Vikramaśilā to invite the scholar who was second to Dípaṃkara in learning and moral purity. At this time Nag-tsho, a young monk of Gung-thân, met Gya-tson and begged to be his pupil, but the Locháva desired him to wait till his return from Magadha. He proceeded to India with five attendants and a small quantity of gold, barely enough to meet the expenses of his journey to Vikramaśilā.

At the same time king Lha Lama started for the frontier for the purpose of collecting gold. When he arrived to the south of Purang, he was attacked by the troops of the Rájá of Garlog (Garwal?) and made a prisoner. The Tibetan force that was despatched from Tholing by the king's sons failed to defeat the enemy, and Chañchhub *Hod*, his nephew opened negotiations with the Rájá of Garlog who agreed to release the king on two conditions :—that either the king became a vassal of his and embraced his creed, or that he paid a ransom consisting of solid gold of the size and shape of the captive king's person. The second condition being more agreeable to Lha Lama than the first, his two sons and nephew Chañchhub *Hod* sent officers to collect gold from their subjects in Tsang, U, Kham and the nine minor provinces called the Lin-gu. The gold that was collected and brought for ransoming the king did not satisfy the heretic Indian chřef. It is said that when melted and cast to form a statue of the captive king, the gold fell short of the quantity that would be necessary to make its head. Seeing that it was impossible to satisfy the greed for gold of the Garlog Rájá and despairing of his release, Lha Lama advised his sons and nephew to make considerable religious offerings at Thoding and Lhasa and also to repair the monastery of Sam-ye for his moral benefit. He impressed in their



minds the importance of inviting to Tibet a scholarly Indian pandit like Dípaṃkara for reforming the degenerate Buddhism of his country. But his sons and Chañchhub, being anxious for his release, went back to Tibet to collect more gold. In the meantime Lha Lama died in confinement.

When the news of Lha Lama's death reached Tholing, Chañchhub made religious offerings at Thoding and Lhasa, and, with a view to give effect to his royal uncle's long-cherished desire of life, charged Nag-tsho Locháva of Guñ-thañ with the mission of going to Vikramaśilá in search of Gya-tson and also for inviting an Indian pandit to Tibet. Addressing the Locháva, he said :—" You know how degenerate the Buddhism of Tibet has become, how mixed are the religious practices here with the heretic cult of the red and blue robe Tantriks ; the late king in his anxiety to reform our religion, thrice sent messengers to Magadha to bring the sage Dípaṃkara Śrījñána to Tibet. Gya-tson-senge has not come back, and it is not known if he is still living. You are also aware of the calamities which befell my royal uncle, and that cost him his life. Go, therefore, to Vikramaśilá, if possible, again to invite the renowned sage of Magadha to our benighted country, but if he still declines to come, invite the pandit who is second to him in learning and holiness." At first, the young Locháva, who was only twenty-seven years old, hesitated to take so difficult a charge upon himself, but the king having insisted on his going to India, of which place he had some experience, he agreed, though very reluctantly, to proceed to Magadha. The king gave him leave to equip himself for the journey with one hundred attendants and to furnish him with a large quantity of gold, but the Locháva would take with him only four attendants and a small quantity of gold. On his arrival at Vikramaśilá he met with Gya-tson, who was then prosecuting his studies under one of the learned pandits of the grand monastery. With the help of Gya-tson, who had by his long residence at Vikramaśilá and other Buddhist places of Magadha, learnt much of the ways and manners of the people of Magadha, the young Locháva became introduced to the principal personages of Vikramaśilá. He resided in the monastery for some time as a pupil of the abbot Sthavira Ratnákara, and with his assistance he succeeded in inducing Dípaṃkara to visit Tibet.

Dípaṃkara was born A. D. 980 in the royal family of Gaur at Vikramanipur in Bangala, a country lying to the east of Vajrásana (Gayá). His father called *Dge-vahi dpal* in Tibetan, *i. e.*, "*Kalyāṇa Śrī*" and his mother Prabhávatí gave him the name of Chandragarbha, and sent him while very young to the sage Jetari an *Avadhut* adept for his education. Under Jetari he studied the five kinds of minor sciences, and thereby paved his way for the study of philosophy and religion.



Growing in age he acquired proficiency in the three *piṭakas* of the four classes of the Hīnayāna Śrāvakas, in the Vaiśeṣika philosophy, in the three *piṭakas* of the Mahāyāna doctrine, the high metaphysics of the Mādhyamika and Yogācārya schools and the four classes of Tantras. Having acquired the reputation of being a great pandit in the Śāstras of the Tīrthikas which he studied till the twenty-fifth year of his age, he defeated a learned Brāhman in Logic. Then, preferring the practice of religion to the ease and pleasures of this world, he commenced the study of the meditative science of the Buddhists which consists of the Trīśikṣhā or the three studies—morality, meditation and divine learning—and for this purpose he went to the *viḥāra* of Kṛishṇagiri to receive his lessons from Rahula Gupta. Here he was given the secret name of Guhyajñāna Vajra, and initiated in the mysteries of esoteric Buddhism. At the age of nineteen he took the sacred vows from Śīla Rakṣita the Mahāsāṃghika Āchārya of Odantapurī who gave him the name of Dīpaṃkara Śrījñāna. At the age of thirty-one he was ordained in the highest order of Bhikṣu and also given the vows of a Bodhisattva by Dharma Rakṣita. He received lessons in metaphysics from several eminent Buddhist philosophers of Magadha. Lastly, reflecting on the theory of “the evolution of all matters from voidity” he acquired what is called the “far-seeing wisdom.”

On account of these divers attainments which moved his mind variously in different directions, he resolved to go to Āchārya Chandrakīrti the High Priest of Suvarṇadvīpa. Accordingly in the company of some merchants he embarked for Suvarṇadvīpa in a large boat. The voyage was long and tedious, extending over thirteen months during which the travellers were overtaken by fearful storms. At this time Suvarṇadvīpa was the head quarter of Buddhism in the East, and its High Priest was considered as the greatest scholar of his age. Dīpaṃkara resided here for a period of twelve years in order to completely master the pure teachings of the Buddha of which the key was alone possessed by the High Priest. He returned to India accompanied by some merchants in a sailing vessel visiting Tāmradvīpa and the island of forests on his way. Returning to Magadha he sought the company of eminent sages, such as Śānti, Naropānta, Kuśala, Avadhuti Tombhi and others.

The Buddhists of Magadha now acknowledged him as their chief and unanimously declared him to be the “Dharmapāla” or the hierarch of Magadha. During his residence at the shrine of Mahā Bodhi at Vajrāsana he thrice defeated the Tīrthika heretics in religious controversy, and thereby maintained the superiority of Buddhism over all other religions in Magadha. At the request of king Nyāya Pāla he accepted the post of High Priest of Vikramaśilā. At this time Magadha was in-

vaded by the king of Kárnya (probably Kánaúj). Nyáya Pála's armies suffered several defeats at the hand of the enemies who advanced near the capital. The Magadha king sued for peace, and a treaty was signed by which friendship was established between the two kingdoms. In this treaty Dípaṃkara took an active part. It was he who reconciled the king of Kárnya to Nyáya Pála.

He visited Tibet in the year 1038 A. D., accompanied by his brother Víryachandra, Rájá Bhúmi-Samga, and Nag-tsho Locháva. The king of Tibet gave him a most cordial reception and commanded his people to receive his teachings with profound veneration. Finding that Dípaṃkara was the best and wisest of the Indian pandits whom he and his father had ever asked to visit Tibet, the king out of reverence for his deep learning and purity of morals gave him the name of Jovo Atíśa (the Supreme Lord who has surpassed all). Arrived at Tholing Dípaṃkara preached the profound doctrine of the Maháyána doctrine and wrote several works on the principles and cult of the general and esoteric branches of Buddhism among which Bodhipatha Pradípa is pre-eminent. In short he revived the practice of the pure Maháyána doctrine by shewing the right way to the ignorant and misguided Lamas of Tibet, who had all become Tantriks. He cleared the Buddhism of Tibet of its foreign and heretic elements which had completely tarnished it, and restored to it its former purity and splendour. Under his guidance the Lamas of Tibet discovered what is called the "real and sure path of the exalted excellence." After a residence of thirteen years which was distributed over the different parts of Tibet, during which he assiduously devoted himself to the propagation of pure Buddhism, enjoying uninterruptedly the good will and veneration of the people, Atíśa died at Ñethang near Lhasa at the age of seventy-three in the year 1053 A. D. He is remembered with deep veneration all over high Asia or wherever the Buddhism of Tibet prevails. He was the spiritual guide and teacher of HBromton the founder of the first grand hierarchy of Tibet.

Dípaṃkara wrote several works and delivered upwards of one hundred discourses on the Maháyána Buddhism. The following names of his works occur in *mdo* 𑀧𑁆𑀭 of *Bstan hgyur*.

1. { Bodhipatha pradípa.  
{ བྱང་ཐུབ་ལམ་གྱི་སྒྲོན་མ་
2. { Charyá samgraha pradípa.  
{ སྒྲོན་པ་བསྐྱེད་པའི་སྒྲོན་མ་
3. { Satya dvayávatára.  
{ བདེན་པ་གཉིས་ལ་འཇུག་པ་

4. { Madhyamopadeśa.  
{ དབུ་མའི་མན་ངག་
5. { Sangraha-garbha.  
{ སྒྲིང་པོ་བསྐྱུ་བ་
6. { Hridaya niśchita.  
{ སྒྲིང་པོ་ངེས་པར་བསྐྱུ་བ་
7. { Bodhisattva manyāvalī.  
{ བྱང་ཆུབ་སེམས་དཔའི་རྟོན་བུའི་བྲེང་བ་
8. { Bodhisattva karmādimārgāvatāra.  
{ བྱང་ཆུབ་སེམས་དཔའ་ལས་དང་པོ་བའི་ལས་ལ་འཇུག་པ་
9. { Śaraṇāgatādeśa.  
{ སྐྱབས་སུ་འགྲོ་བ་བསྟན་པ་
10. { Mahāyānapatha sādhana varṇa samgraha.  
{ ཐོག་པ་ཆེན་པོ་ལས་གྱི་སྐྱབ་ཐབས་ཡི་གེར་བསྐྱུས་པ་
11. { Mahāyānapatha sādhana samgraha.  
{ ཐོག་པ་ཆེན་པོའི་ལས་གྱི་སྐྱབ་ཐབས་ཤིན་ཏུ་བསྐྱུས་པ་
12. { Sūtrārtha samuchchayopadeśa.  
{ མདོ་སྤེའི་རྟོན་ཀྱན་ལས་བདུས་པའི་མན་ངག་
13. { Daśakuśala karma pāda deśa.  
{ ས་དག་བ་བཅུའི་ལས་ཀྱི་ལས་བསྟན་པ་
14. { Karma Vibhaṅga.  
{ ལས་རྟོས་པར་འབྲེན་པ་
15. { Samādhi sambhāra parivarta.  
{ ཏིང་ངེ་འཛིན་གྱི་ཚོགས་ཀྱི་ལུ་
16. { Lokottarāṅgasaptaka vidhi.  
{ འཛིག་རྟོན་ལས་འདས་པའི་ཡན་ལག་བདུན་པའི་ཚོག་
17. { Guru Kriyākrama.  
{ སྤྲ་མའི་བྱ་བའི་རིམ་པ་

18. { Chittotpáda samvara vidhi krama.  
 { མིམས་བསྐྱེད་པ་དང་སྒྲུམ་པའི་ཚེ་གའི་རིམ་པ་
19. { S'ikshá samuchchaya ábhi samaya.  
 { བསྐྱེད་པ་ཀླན་ལས་བདུས་པའི་མངོན་པར་རྟོགས་པ་

This was delivered by S'rí Dharmapála the king of Suvarṇadvípa to Dípamkara and Kamala.

20. { Vimala ratna lekhaṇa.  
 འོ་མ་ལེན་པའི་རིན་པོ་ཆའི་སྒྲིན་ཡིག་

This last is an epistle addressed by Dípaṃkara to Nyáyapála, the king of Magadha.

*Place and River-Names in the Darjiling District and Sikkim.*—By L. A. WADDELL, M. B.

*Facility for finding etymology of names in this area.*—The manner in which place-names are assigned in Sikhim, Eastern Nepál and Western Bhotan, and also in Southern Tibet, can be ascertained with unusual facility and certainty by a local review of place-names in the Darjiling district, Native Sikhim and British Bhotan, owing to the great majority of the villages therein, having been founded within the present generation by migrant Sikhimites and Bhotiyas and immigrant Nepális and Tibetans, under the Government policy of quickly peopling these hitherto sparsely populated tracts; so that the reasons for the special nomenclature of such new sites and villages are still currently known by the villagers. And, the etymology of many of the river-names and older place-names can be more or less readily traced owing to the still existing-presence of the race of Lepchas—believed to be the autochthones of the area. The relative simplicity of the subsequent ethnic elements, all of which are still represented, also tends to simplify the problem.

*Desirability of fixing the Lepcha etymology as the language is becoming extinct.*—The present time, too, seems specially indicated for investigating this subject, from the fact that the Lepcha, though still a living language, is fast becoming extinct; and no vocabulary of the language having been published\*, the names which the Lepcha race has given to

\* Mr. Hodgson published (*Essays*, London reprint, 1874) a short list of Lepcha words, and several words are to be found scattered through Colonel Mainwaring's *Grammar of the Rong (Lepcha) Language*; but these are quite insufficient for the present enquiry.



the rivers and the mountains and other sites in Sikhim, although remaining as ethnological landmarks, might, through much longer delay, prove wholly unintelligible, through their meaning becoming lost.

In my attempt to fix the etymology of some of these Lepcha names, I have to confess to the difficulty of the task in the absence of any vocabulary; but I have spared no pains in the endeavour to trace the exact meaning of the various roots by the help of the few more-intelligent Lepchas available (of literate Lepchas there are now none), and by local enquiry at most of the several spots during the past two or three years.

*Ethnic history of Sikhim.*—A reference to the ethnic history of Sikhim itself is necessary in essaying the discovery of the system adopted by its inhabitants in naming places within its area. And first of all as to the limits and position of Sikhim.

*Sikhim defined.*—Sikhim forms a narrow oblong tract in the south-eastern Himalayas and sub-Himalayas, wedged in between Nepál on the west and Bhotan on the east, and bounded on the north by Tibet and on the south by the plains of Bengal. Its position is peculiarly isolated, it being separated from Nepál and Bhotan by high wall-like ridges, from Tibet by the snows, and from Bengal by the dreaded Tarai jungle.

*Darjiling district defined.*—The Darjiling District consists mainly of 'British Sikhim,' *i. e.*, the southern third of Sikhim, including the Sikhim Tarai (or Morang), the plains skirting the foot of the hills. To this tract was added, as a result of the Bhotan war of 1862, a slice of the hilly portion of western Bhotan from the Tista eastwards: the remainder of 'British Bhotan' is the *tarai*-tract known as the 'Dwárs' and a strip of hill territory in the neighbourhood of the British frontier-posts of Buxa and Dewangiri, which for administrative purposes are included in the Jalpaiguri District and Asam.

*The Lepchas.*—As above stated, the Lepchas are believed to be the aborigines of Sikhim. Their own tradition, which, is very vague, credits them with having entered Sikhim about 500 years ago.\* As, however, they preserve the tradition of a great local deluge,† it is probable that their entry was much earlier than this. The peculiarly

\* Col. Mainwaring in *Introduction to Grammar*, p. x.

† This tradition is a somewhat circumstantial account of the flooding of the country by the Great Rangit river, quarrelling with its spouse the Tista and refusing to go with her to the plains. The waters rose as high as 'Rangli Rangliot' (q. v.), *i. e.*, over 4000 feet above the present level of the river, and even Mt. Mainom the sister of Tendong was submerged, Tendong saving the inhabitants only by raising himself above the waters. The quarrel was ultimately mended and the pent-up waters fell. There are so many side-stories bearing on this great deluge, that it is almost certain that a great local flood actually happened here, by a vast landslip (volcanic or otherwise) damming up the waters for a time.

isolated position of Sikhim and its inhospitable nature can account for its comparatively late occupation. The term 'Lepcha' is, like the current name for their country (*viz.* Sikhim), of Nepáli origin and uncertain meaning.\* The Lepchas call themselves *Rong* which in their vernacular means a 'squatter' or 'care-taker,'† and the country they call '*Ne láyang*' or 'the country of caves,' *i. e.*, for shelter. By the Bhotiyas (Tibetans) they are called Möm-bô (Mon-pô) and Mö-rí (Mon-riks), *i. e.*, 'Inhabitants of the Mon Valleys' and 'Mon tribe'. The Lepchas seem to have preceded the Bhotan Bhotiyas in the *trans-Tista* (British Bhotan) portion of the Darjiling District, as most of the mountain and river-names there are of Lepcha origin.

*The 'Sikhim-Bhotiyas' or 'Sikhim-Tibetans.'*—The next ethnic element was an influx of Tibetans from the Tsang province of Tibet immediately to the north of Sikhim. The date of this immigration is fairly well known—it occurred about 400 years ago.‡ These Tibetans promptly usurped the sovereignty and became the dominant race, and the present 'rájá' of Sikhim is about the 10th or 11th of this series of Tibetan chiefs. The routes by which they entered are still called '*the great pass*' (La-chhen), and '*the short pass*' (La-chhung). Although they intermarried freely with the Lepchas and still do so to a considerable extent, they awarded them a very low social position; and so unfashionable and effete has the Lepcha race now become that the Lepchas seek self-effacement by intermarriage with Bhotiyas and Limbus, and so are fast contributing to the speedy extinction of their own race. These Tibetans of Sikhim are by the Nepális called Sikhim Bhotiyas. It is desirable here to define the terms 'Bhotiya' and Bhotan as they are frequently confused and misunderstood. The native name of Tibet is written *Bod* and pronounced *Pöf*. The Sanskrit form of this word was *Bhot*,§ and its inhabitants by all the Sanskritic speaking races of India are called *Bhotiya* (also written *Bhutiya*) which is synonymous with *Tibetan*—'Tibet,' the current European form, being believed to be merely the Persian or Tartar

\* The Nepális pronounced the word 'Lapche' which is the true pronunciation. It is said to be a contemptuous term, and is possibly derived from the Parbatíyá *lab + che* = 'the vile speakers.' The Lepchas, unlike the Limbus and other neighbouring tribes of apparently cognate origin did not adopt the Parbatíyá language.

† And their explanation is, that they were originally given this country by God to take care of. It is unlikely that this name is derived from the Tibetan *rong*, 'a valley,' as the word does not seem exotic. It is probably related to their legend of Mount Ten-dong, *q. v.*

‡ Mainwaring, *loc. cit.*, p. x.

§ Hodgson believes that the Tibetans derived the name of their country from the Sanskrit appellation through the early Indian Buddhist missionaries.—*The Language &c. of Nepal and Tibet*, p. 22. This, however, is doubtful.

form of the same word *Pöt*.<sup>\*</sup> The country generally known in India as Bhotan† was so called by the Bengalis in the belief that it was ‘the end of Bhot,’ which is the literal meaning of the full Sanskrit form of the word, *viz.*, ‘Bhotánta.’ The natives of Bhotan as well as of Tibet proper are also by Hindus called Bhotiyas as being inhabitants of Bhot. It is therefore to be remembered that the terms Bhotiya and Tibetan are synonymous, the various divisions being designated by prefixing the name of the country in which the Bhotiyas are now settled, *e. g.*, Sikhim-Bhotiya, Nepáli-Bhotiya, Bhotan or Dharma-Bhotiya, Tibetan and Chinese Bhotiyas.

*The Limbus.*—More peaceful intruders were the Limbus‡ a Mongoloid race from the adjoining hills on the west. These like the Sikhim Bhotiyas intermarried, and still do so, to a considerable extent with the Lepchas. They, however, had a superior civilization and formed settled abodes. Latterly, they have generally given up Buddhism in favour of a rough form of Hinduism, and have adopted the dress and to a large extent the dialect (*Parbatiyá*) of the Nepáli highlanders.

*The Nepális or ‘Paháriyás.’*§—These three tribes, *viz.*, the Lepchas,

<sup>\*</sup> E. Coleborne in *J. R. G. S.*, Vol. I, Supp., I, p. 98, says “A Tibetan arriving in Ta-chien-lu from Lhasa on being asked from what country he has come will often reply ‘from Teu Peu’, meaning from High or Upper Tibet. Perhaps Teu Peu is the source of our Tibet.” The word should properly be spelt Tö-pöt, which fairly approximates to our ‘Tibet.’ L. A. W.

† The natives and all Tibetans call this country ‘Duk-pa’ (*hbrug-pa*) which literally means ‘the thunderer,’ evidently, it seems to me, on account of the unusual amount of thunder experienced here; as the mountains of the greater part of the tract receive the full force of the monsoon from the top of the Bay of Bengal. The Lamas on the other hand assert that the name is derived from the Duk-pa sect of Lama and implies the worship of the thunderbolt which is so peculiar to Bhotan Lamaism: the name of thunderbolt, however, is ‘*dorje*’ not ‘*duk*,’ and the name may more probably be merely a result of the worship of the (for Tibetans) striking and somewhat mystic natural phenomenon (thunder characteristic of this area. And this view is supported by the vernacular history of Bhotan—the ‘*Namtharkyi Nag-wang-ten-dsin Nam-gyal*’—which translates the title ‘*hbrug-pa*’ (*i. e.* Dukpa) into Sanskrit as *megha-svara* or ‘cloud-voice.’

‡ So called by the Nepális; they call themselves *Yák-thumba* (or *Yák-herds*), and the Lepchas and Bhotiyas call them *Tshong* (which in the vernacular means ‘a merchant’; and the Limbus were and still are the chief cattle-merchants and butchers in Sikhim, and cattle was the chief form of exotic merchandise until the British occupation.)

§ It is to be noted that the term ‘*Parbatiyá*’, a Sanskrit word having an identical meaning, *viz.*, ‘of or belonging to the hills’, is in practice restricted to the language, a Hindí dialect spoken by the Paháriyás. And the title of *paháriyá* is confined to those hillmen only who profess Hinduism, and this usually of a most lax type.



Bhotiyas and Limbus, formed the population of Sikhim; and this simplicity of ethnic constitution remained undisturbed (except for a brief incursion of Ghorkhas about the beginning of the present century, the intruders, however, being soon expelled by the British) until the British occupation of Darjiling as a Sanitarium. This latter event, which took place in 1837 was speedily followed by a large addition to the population, consisting mainly of Nepáli or '*Paháriyá*' (Hindí for 'hill-man')\* settlers from Eastern Nepal.† This great influx of Nepális during the past few decades, although comprising very numerous and distinct tribes, (*viz.*, Newars, Kiranti, Murmi, Gurung, Mangar or Magar Khas &c., all more or less Mongoloid in type and until recently each speaking widely different dialects) is from a linguistic point of view practically homogenous, from the great majority of these tribes having adopted the Sanskritic '*Parbatíyá*' dialect along with the Hindú ceremonial of their Gorkhálí rulers.

*The Bhotan Bhotiyas or Duk-pa.*—The portion of Bhotan annexed to the Darjiling district in 1862 had previously contained only a very few settlements of Bhotan Bhotiyas (or '*Duk-pa*') and Lepchas. This tract being also thrown open to emigrants, a large portion was soon occupied by Nepális, and a not inconsiderable number of refugees from independent Bhotan, and a few Tibetan Bhotiyas or *Pö-pa*.

*Simplicity of the linguistic elements.*—Linguistically then, there may be considered to be, and to have been, only three generically distinct languages prevalent among the settled inhabitants of Sikhim and the Darjiling district, *viz.*, the (1) Lepcha (or Rong-ring) with

\* So sparsely was Sikhim populated that Dr. Campbell estimated ('*The Oriental*' January, 1874, p. 13) that, at the British occupation of Darjiling, the population of Native Sikhim was not more than 5 to the square mile: in the proportion of Lepchas 3,000, Bhotiyas 2,000, and Limbus 2,000. While in the southern third of Sikhim forming the Darjiling Hill Tract the total population amounted only to about 100! In 1849 the population of the latter area had, by attracting settlers from Nepal, Sikhim and Bhotan, increased to about 10,000, and the Census of 1881 showed the population of the Darjiling district, including the added strip of Bhutan to the east of the Tista, to amount to 155,645, and the 1891 Census brings the number over 200,000. The population is still increasing, and Native Sikhim also shares in this increase, although at a much less rapid rate.

† The Gorkhas, now the ruling race of Nepal, derive their name immediately from the town of Gorkha which is about 60 miles W. N. W. from Katmandu (Oldfield's '*Nipal*,' Vol. I), and which formed the first location of their Rájput ancestors in the Himalayas; but this place-name is in its turn derived from the eponymous deity of the now royal family, *viz.*, Gorakhanáth, who seems to be a form of S'iva (Cunningham's *Anc. Geog.*, p. 165). Only a small proportion of the members of our so-called 'Gorkha' regiments are really Gorkhas, the majority are Mangar, Gurung, Kiranti, &c.



which may be included the Limbu dialect which seems structurally allied to it, (2) the Tibetan or Bhotiya, including its Sikkhimité and Bhotan dialects, and (3) the Sanskritic dialect (Parbatiyá) of the Nepáli Paháriyas. All these linguistic elements are represented in the local names of the area here discussed; and in addition, in the Tarai is a slight Bengali (Sanskritic) element of recent introduction; and in the hill-tract are several English names designating settlements connected with colonization and British enterprise in the tea-industry, *e. g.*, Hope-town, Bloom-field, Bannock-burn, Birch-hill, &c., but too few to merit special notice.

*Plurality of Place-names.*—The oldest names are found to be of Lepcha origin. The Lepchas from their wild forest life are 'born' naturalists, possessing a name for nearly every natural product, animal or vegetable, whether of economic value or not. Hence they readily gave discriminating names to the chief mountains, rivers and sites in their neighbourhood. A few of these old names still survive in places where the Lepchas no longer are present. The Bhotiyas, on settling in Sikkim, bestowed their own names on many of the already named sites, partly perhaps from the fact that the meaning of the Lepcha name was not evident, and partly to express their contempt for the Lepchas. Thus, many of the hills and rivers possess two names, *viz.*, a Lepcha name and a Bhotiya (Tibetan) name, *e. g.*, the *Riot Ung* and *Rang-nyu Ung* of the Lepchas are the *Dik-chhu*, and *Tsang-chhu* of the Bhotiyas; and the *Kong-ló chu* and *Na-tam chu* of the Lepchas are called *Kang-chhen-dzö-nga* and *Kabur* by the Bhotiyas. And since the influx of Nepális a third synonym in the Parbatiyá dialect of Hindí has been added in several instances for rivers, mountains and already named sites, *e. g.*, *Tista* and *Jalapahúr* are the current Paháriyá names for the Lepcha *Rang-nyu Ung* and *Kang-gol hlo*; but such Nepáli synonyms usually are merely corruptions of the Lepcha or Bhotiya names, *e. g.*, the *Rá-dó* of the Lepchas, *Chumi-chhen* of the Tibetans and *Am-bi-ok* of the Bhotan Bhotiyas are corrupted by the Nepális into *Ladhoma*, *Simik chi* and *Ambek* respectively.

*Orthography employed.*—A few words here are necessary regarding the orthography employed. The current English forms (in maps &c.) of spelling geographical names in this area, as elsewhere, are usually most incorrect and unsystematic: the spelling and pronunciation disagree at every turn, and are out of keeping with the native form, which is the only true one. The system adopted in this paper is the precise method of Sir W. Jones as recognized by the Society, and now generally followed for philological purposes. To adapt it to the complicated vowel-sounds and semi-silent final consonants of the Tibetan, and

the peculiarity that such words are not pronounced directly as they are spelt, the following modifications generally following De Körös' system have been introduced:—In transliteration all the words are fully spelt (and not as in Jäschke's method which seems to me too contracted and symbolic), and the silent letters are put in italics. Diacritical marks are only used in the alternative spelling which gives the pronunciation: the letter ô has an *aw* sound like the *aw* in *law* and *awful*, it literally represents the spelling in the written form; the vowel sound *é* is as in French, and *ö* and *ü* are as in German; a subscribed dot to a final consonant indicates that it is almost silent. The following Tibetan letters are transliterated thus:—

|          |           |         |
|----------|-----------|---------|
| ཨ = ch.  | པ = ph.   | ང = ng. |
| ཅ = chh. | ཨྱ = tsh. | ཡ = ny. |
| ཐ = th.  | ཙ = zh.   | ན = n.  |

and the nasal *n* is represented as *ñ*. The Lepcha words are spelt phonetically—their vowel sounds are so very complex and the language so decidedly *tonic* in character, that it is frequently almost impossible to express the exact sound in writing even by compound diphthongs.

*Division of the names.*—In detailing the etymologies of the local names it is convenient to arrange these in groups according to their Lepcha, Tibetan and Paháriya origin; and also to divide the place-names into names of mountains, passes, gompas (monasteries) and village or ordinary place-names.

## THE RIVER-NAMES.

*Of Lepcha origin, the majority.*—In so mountainous countries as Sikkim and British Bhotan the rivers are very numerous. Most of the river-names in Sikkim proper are known only by their Lepcha names to both Bhotiyas, Paháriyas and the English. The Lepchas have no special word for 'river,' but employ instead the word for water, *viz.*, *ung* in a variety of combinations. The Bhotiyas in adopting the Lepcha river-names substitute for the Lepcha suffix *ung*, the suffix *chhu* which has an identical meaning. While the Paháriyas substitute *khola* (which in Parbatiyá literally signifies 'a valley') or *nadí* the ordinary Hindí name for rivers. Thus the *Rang-nyet ung* of the Lepchas is the *Rang-nyit chhu* of the Bhotiyas, the *Rang-gît nadí* of the Paháriyas and the *Rungeet river* of the English.

### *Lepcha River-names.*

The majority of the Lepcha names for rivers contain the prefix *Rang*

which conveys the sense of extension or length\* and is to be met with in other words, *e. g.*, *Rang-gan* = a steep ascent, &c. The following are instances of river-names with this prefix.

RANG-NYET UNG = *Rang*, extended, + *nyet*, two + *ung*, water = 'the two extended waters.' There are two rivers of this name, *viz.*, the *Rang-nyet ung mo*, 'the mother, or greater Rangít' and the *Rang-nyet ung kap* or 'the young, or lesser Rangít,' and they form 'the two' principal rivers of Sikhim proper. (The *Tísta*, which is of course larger, arises beyond Sikhim).

RANG-FO UNG = *Rang* + *fo*, muddy brown + *ung* = 'the muddy brown extended water.' A rivulet arising in the reddish lateritic soil of the low outer hills, and tributary to the *Tísta* near Sivok.

RANG-ZO UNG = *Rang* + *zo*, precipitous or semi-vertical + *ung* = 'the precipitous river.' A torrent tributary of the *Tísta*.

RANG-RONG UNG = *Rang* + *rong*, splashing. A tributary of the *Tísta* in Sikhim descending throughout greater part of its length over boulders and precipices.

RANG-PO UNG = *Rang* + *po*, to shift or wander.

RANG-GLO UNG = *Rang* + *glo*, to fall.

RANG-GUK UNG = *Rang* + *guk*, narrow and constricted.

RANG-NON-UNG = *Rang* + *non*, to go straight.

RANG-FOK UNG = *Rang* + *fok*, to be incised deeply.

RANG-NYU UNG = *Rang* + *nyu* = queen, 'the queen river' as it—the *Tísta*—is the Spouse of the great Rangít. *Nyu* is also said to be a contraction for *nang-yü*, *i. e.*, 'straight-going.' Where the *Tísta* receives the Great Rangit, the chief river of Sikhim, which joins it at a right angle, the *Tísta* continues in its straight unaltered course, its direction being unaffected by this great accession of waters, hence is attributed its Lepcha name. It is more likely, however, that it is so-called on account of its straight arrow-like course *after leaving the hills*, in contradistinction to the other great effluent river of Sikhim (the *Mahaldi*) which means 'the bent moving water'. Another possible derivation is from *a-nyung* = deep; the *Tísta* being the deepest river in Sikhim and always unfordable.

Other river names containing this prefix are *Rang-bi* (= *bik*, to tear asunder), *Rang-mo*, *Rang-li* and *Rang-fap*, &c.

A few of the rivers share the prefix *ra* in common:—

\* Another possible, though not very probable, derivation is from *Dang* = to run, *i. e.*, + *ung* = running waters; *d* is frequently converted into *r* by the Lepchas—but this particular word in the colloquial is not subject to such change.



RA-THONG UNG = *Ra*, surging and tumultuous advance, + *thong*, to swallow or drink up. The main source of the Rangít, and a glacier-fed rapid torrent subject to sudden and destructive flood.

RA-DÔ UNG = *Ra*, (as above) + *dô*, a lake. The river arises from a small lake called '*Kala pokh'ri*', or the black lake' by the Nepális and *Ung-Dô* by the Lepchas.

RA-MITH UNG = *Ra* + *mith*, dust or grit. Arises in the lower slopes below Birch Hill and is turbid.

RA-MOM UNG (*Pahariya* '*Ra-mám*') = *Ra* + (?) *Mong*, a demon, the name of the lake—*Mong-dô*—whence this river rises, beyond Phallut. (As an alternative derivation *mom* = incomplete, somewhat, in the sense of the Latin *sub*).

Other rivers are named :—

RO-LO UNG = *Rol*, tortuous.

RÍ-LÍ-UNG = *Ril*, to revolve or turn round.

RÍ-RÍ UNG = *Ri-ri*, swift or rapid.

RÍ-YOT UNG = *Ri*, rapid + *yot*, let loose, or unlimited. An extremely rapid river called by the Bhotiyas the *Dik-chhu* (q. v.).

RÍ-SHÍ UNG = *Ri*, + ? *shiap*, whirling. A rapid mountain torrent.

RE-ING UNG ('Raing' of map) = *Re-ing*, to spread out, or be shallow. A shallow and broadish rivulet in the outer hills near Sivok.

MA-HAL-DÍ UNG (corrupted by Bengalis and Paháriyas into '*Mahanadí*' or '*Mahananda*') = *Má-hal*, bent or curved + *dí* to move. This river, as seen from the hills, takes a very sudden bent to the right on reaching the plains; and seems so-called in contrast to the *Rang-nyu Ung*, i. e., 'the straight river,' the Lepcha name for the other great effluent river of Sikkim, viz., 'the Tista'.

#### *Bhotiya River-names.*

The Sikkim-Bhotiyas exhibit much poverty of invention in naming their rivers. When not directly borrowing the Lepcha name, which is the rule, they usually name the stream after the mountain whence it arises, or after the chief village or pass near which it flows. For example :—

LA-CHHEN CHHU = ལ་པ་ལ་པ་ la, a pass + རྒྱ་ཆུ་ chhen, great + ཆུ་ chhu, water: 'the water of the great pass.'

LA-CHHUNG CHHU = la + རྒྱ་ཆུ་ chhung, small + chhu: 'the water of the small pass.'

RÍ-TSE CHHU = Rí-tse, the name of the hill + chhu.

RONG-LI CHHU = Rong-lí, a Lepcha's house + chhu. At the ford or bridge over this river was encountered the first Lepcha's house on the way from Tibet.



As a result of this loose style of nomenclature, the same river possesses different names at different parts of its course, *e. g.*, the Lachhung is called the 'Yum-thang chhu' and 'Mome chhu' opposite these two villages.

Exceptions to this practice are had in the following amongst others:—

DĪK-CHHU = ཁྲོ་ dig (pr. *tik* or *dik*), staggering or reeling + chhu.

A snow-fed stream which in a rocky bed descends about 10,000 feet in a course of about twelve miles.

RĪ-ZE CHHU (*Ang.* Rishi) རི་ rí a mountain + གཙལ་ gzar (pr. *zé*) a torrent. A mountain torrent crossed on the way from Tibet.

TSÁNG-CHHU = གཙང་ gtsang, pure + chhu: 'the pure water'—the Bhotiya name of the Tista, deriving the name from its property possessed in common with all large rivers of tending to become quickly *purified* from defilement.

LE-TÍ CHHU = སྒྲ་ sle, to twist or plait + རྒྱུ་ hkhrib (pr. *tí*), to twist or coil.

RO-RO CHHU = རྩ་ རྩ་ rok-rok, black or gloomy.

LAKES are neither large nor numerous in this area, but such as do exist have usually mythological names and are believed to be the spouses of the hills in the neighbourhood. A small lake on Lebong Spur which was filled up last year in preparing the Station polo-ground was called *Me-long tshô* or 'the mirror-lake'. Another lake valley is called *Chhu lonk-yo*, said to mean 'a spoon of water'.

#### *Nepáli (Parbatiyá) River-names.*

The Paháriyas have accepted the Lepcha and Bhotiya names for the rivers within the hills, but have usually contorted these names by mispronunciation to an almost unrecognizable extent: *e. g.*, the 'Ra-dô' and the 'Kale' of the Lepchas have become the Ladhoma and Kulhait of the Paháriyas.

The small hill streamlets are called by them *jhorá* from the *Skt.* झर, *jhara*, a cascade or water-fall, from the root *jha*, to waste. These *jhoras* are individualized by being named after the adjoining village, or the special use they are put to, *e. g.*, *Dhobí-jhora* (*H.* धोबी *dhobí*, a washerman) = 'the washerman's stream'; *Kák jhora* (*H.* काक *kák* a crow) 'the crow's brook', near the municipality rubbish-heap at Darjiling, where crows and kites congregate. When a hill-stream is subject to very sudden and violent outbursts, it is called *Paglá jhora* (*H.* पगला, *paglá* insane or mad) 'the mad stream,' on account of its furious and erratic behaviour.

As regards the effluent rivers which debouch on the plains, the Pahárias have accepted the current Bengali names for these, *viz.* :—

**TÍSTA.** The Sanskrit form of the name is *Tri-srota* (*Skt.* त्रि + स्रोत) = ‘the three currents.’ The Tísta, until the year 1787 A. D., when it suddenly forsook its old bed and opened for itself a new channel, on emerging from the hills divided into three portions named the Atrai, the Púrñabhadra and the Karotoya rivers, which each followed independent courses to the Ganges and the Brahmaputra respectively. The name is of very old application, being mentioned as the *Tri-srota* in the Puráṇas; and as this name well described its leading physical feature in the plains, and under the Prákrit rules the *r* of compound consonants is dropped in ordinary speech, thus forming ‘Tísota’ or ‘Tísta’—this seems to be its true etymology. An alternative etymology might be suggested, *viz.*, *Skt.* दृष्ट, *trishṭa* = ‘harshly sounding’; but in the deltaic portion of its course this is not a character of its slow-flowing waters, and the literate Bengalis had no access to its course within the hills.

**MAHANANDA.** This is the Bengali corruption of the Lepcha name *Mahal-dí*, which name, as already shown, describes the most obvious feature of this river suddenly *bending* away to the right. The letters *l* and *n* are always interchangeable in speech, but after having made this interchange, as no plausible interpretation could be put on such a word, the Bengalis, and following them the Paháriyas, usually pronounce it ‘*Mahánadí*,’ *i. e.*, ‘the great river,’ although its size does not warrant such a title.

**BÁLASAN** or **BÁLASON** is the Bengali name for the plains-portion of the Rishi Chhu of the Sikkimites. It is believed to be derived from the Bengali बालि, *báli* (*H.* bálu) sand, + सोन, *sona*, gold, with reference to its extensive bed of yellowish sand.

**MECH** or **MINCH**, the remaining *morang* (tarai) river (excepting the Chenga) is said to be so named from being the western boundary of the tribe, called by Bengalis *Mech* and by themselves *Bodo*—the semi-aborigines of the *morang*.

### THE MOUNTAIN-NAMES.

The mountain names are mainly of Lepcha and Bhotiya origin. The names of the snow-clad peaks are almost wholly Bhotiya (Tibetan); as the Lepchas affect the lower levels and the valleys; while the Bhotiyas usually keep to the cooler heights, and were brought into

constant relation with the higher peaks and passes in their commercial and religious intercourse with transnivean Tibet. The Paháryas have no name for the individual snow-peaks, but call them collectively 'Himál' from *Skt.* हिम *hima* snow, + आलय *álaya*, house = 'abode of snow;' or 'Dhaulā giri, *Skt.* धवल, + गिरि 'white mountain' (= 'Mont Blanc.')

*Lepcha names of Mountains.*

SHIN-SHEL HLO (*Ang.* Senchul) = *Shin*, cloud and mist-enveloped + *shel*, to be wet or dank + *hlo*, a mountain = 'the damp misty hill.' This mountain overlooking the plains receives the full force of the monsoon and is cloud-capped for the greater part of the year, so as to have been abandoned as a military site for the very qualities designated by its Lepcha name.

MA-HAL-DI RAM = *Mahaldí*, name of river above described, + *ram*, the source or fountain-head = 'the head of the Mahaldí' river.

SA-THONG HLO (*Ang.* Sitong) = *Sa-thong*, a tiger + *hlo*, a hill = 'tiger-hill.' A hill near Kursiong overlooking the tarai and still frequented by tigers.

KUNG-GOL HLO, the Lepcha name for Jalapahar = *Kung*, a tree + *gol*, fallen or upset. The appearance from above is that of a prostrate tree: Birch Hill and Lebong Spurs being the main branches, and the smaller spurs the branchlets.

FOK-LUT (*Ang.* Phallut) = *Fok* to be excoriated or denuded + *lut*, an elevation or peak. This peak is so called on account of its top being bare of forest (being above the limit of trees), giving the appearance of being stripped or peeled of forest.

SING-LE HLO (*Ang.* Singlelah) = *Sing-le*, a kind of alpine Alder (*Alnus vel Betula*, sp.). A steep mountain on the Nepal frontier beyond Phallut crowned by Alder trees.

TUN-DONG or TÜN-RONG (*Ang.* Tendong) = *Tün*, to heap or raise up + *rong*, a horn; also *Tung rong*, = a ladder. A sub-conical mountain, which tradition asserts arose like a horn from amid a local deluge, and so enabled the Lepchas to escape being drowned. Their tribal name of *Rong* may perhaps be associated with this legend.

MA-NOM (*Ang.* MAINOM) = *Ma*, mother + *nom*. sister. 'The elder sister' of Tendong.

SA-BAR KAM (*Ang.* Subarkum) = *Sa-bar*, the musk-deer, + *kam*, an overhanging rock. Formerly a favourite haunt of musk-deer, between Sandukfu and Phallut.

KONG-LÔ CHU = *Kong*, highest or pre-eminent + *lô*, a screen or curtain + *chu*, snow and rocky mountain : 'the highest curtain of the snows.' The Lepcha name for Kangchhen-dsö-nga (*Ang. Kanchinjunga*) which is worshipped as a god.

NAN-TAM CHU = *Nan*, level + *tam* cut away, truncated (also *tám* a plain) + *chu*. The Lepcha name for Kabru or Kabar: describing the peculiar truncated appearance of that mountain as seen from the greater part of Sikkim proper.

PAN-DIM CHU = *Pan-dim*, a king's minister (derived from *pa-no* a king). A high sub-conical peak, which is considered to be an attendant on the god 'Kanchinjunga.'

TA-SING BLÜ = *Tasing*, ? ..... + *blü*, a ridge.

*Bhotiya Mountain-names.*

KANG-CHHEN DSÖ-NGA (*Ang. Kanchinjunga*) = ཀང་ཆེན་ gangs, snow + ཆོ་ཤི་ chhen, great + མཛོད་ mdsod, a repository or ledge + ལྔ་ lnga, five = 'the five repositories of the great snows,' referring to the 5 peaks of this, the second highest mountain in the world, which is an object of worship to both Bhotiyas and Lepchas.

FYUM-GANG = *Fyum* a kind of bambu (*Thamnocalamus*, sp.) + སྐང་ sgang, a ridge. Hooker noted\* the appropriateness of this name.

CHUMO-HLA-RI = རྒྱལ་མཚན་ jomo, a lady + ལྷ་ hla, god + རི་ rí, a mountain = 'the goddess mountain.'

KANG-CHHEN GYAO (*Ang. Kanchinjaw*) = Kang-chhen + རྩ་ལྷ་ rgya-wo, *pr. gya-o*, bearded, with reference to its monster icicles.

SAN-DUK-PHU. This is interpreted by Lama Ugyen Gyatsho, whom I consulted regarding several of the Tibetan names, as བསམ་ bsam, meditation + རྒྱལ་ grup, to obtain + ཕུ་ phu, a height = 'the height or cave on which wishes by meditation will be obtained.' This mountain, however, is not called 'Sam-dup-phu,' nor has it reputed sanctity or any sacred spot. I believe that the name is derived from རྩ་ rtsa, a plant + རྩ་ dug, poison + phu = 'the height of the poison plant.' Here aconite and poisonous rhododendron are so abundant that all the sheep and cattle are muzzled while crossing this mountain; and it is a peculiarity of the Sikkim and Tsang dialect of Tibetan that a final *n* is frequently introduced as an affix to the first syllable

\* *Him. Journ.* II, p. 198.



where absent in the written Tibetan\*; thus *tsa-duk* becomes *tsan-duk*.

NAR-SENG = སྐ་ sna, a nose + རྟེན་ seng, uplifted. 'The uplifted nose,' descriptive of the appearance of the mountain as seen from lower Sikkim.

FA-LI-LUNG = ཕལ་ལི་ pha-li, a large shield + རླུང་ lung, wind = 'the shield of the winds.' This high ridge tends to shield lower Sikkim from the S. W. monsoon.

RÍ-NAK (*Ang.* Rhenock) = རི་ rí, a hill + རྒྱལ་ nag, black. The soil of this hill is a very black humus.

RÍ-TSE (*Ang.* Rishi) = རི་ rí + རྩེ་ rtse, summit = 'the hill top'; the path leads over the top of the hill.

CHHORTEN-GANG = མཚོ་ལྷོ་ rten, a chaitya + སྐྱང་ sgang = 'the chaitya ridge.'

PÖ-GA GANG = *Pö-ga*, the sal tree + སྐྱང་ sgang = 'the ridge of sal trees'.

RÍ-SUM = རི་ rí + གཙམ་ gsum, three = 'the three hills'; at this site three ridges unite.

RÍ-ZHAP (*Ang.* Rishap) = རི་ rí + རྩམ་ zhaps, a foot = a site at foot of the Himalayas.

LUNG-THU (*Ang.* Lintu) = རླུང་ lung, a mountainous valley + ཐུ་ thur, a steep descent. This mountain presents an unusually steep descent to the valleys. Many of the Bhotiyas call this hill *Lung-tong* རླུང་ཐོང་, i. e., 'the deserted mountain valley.'

PANG-KA-SHA-RI (*Ang.* Pankhasari) = ཕྲང་ spang, pasture + རི་ ka-sha, a kind of grass + ri. 'ka-sha pasture-land.'

DÁ-LING = མདའ་ mdah, an arrow + རླིང་ gling. A subconical (arrow-head like) hill. Formerly a strong frontier fort of the Bhotanese.

BAR-NYA (*Ang.* Barmi) = རྩམ་ hbar, burned + རྒྱལ་ gnyah, a neck: 'the burned saddle or spur'.

#### *Paháriyá Mountain-Names.*

The Paháriyás generally accept the Lepcha and Bhotiya mountain-names. Amongst the exceptions are the following :—

- \* Examples of this in Sikkhite are :—*min-da*, a gun, for the Tibetan *me-dah*.  
*min-tok*, a flower    „    „    *me-tok*.  
*mingo*, not wanted    „    „    *mi-go*.  
*gyám*, fat    „    „    *gyak*.

And in Tsang-pa dialect of Tibetan an *n* is frequently inserted where the following syllable has, as in this case, an initial *d*; e. g. :—

*gan-de* (= good) spelt *dga-bde*.  
*tshan-de* (= hot) „ *tsha-hde*.

JALA PAHÁR = H. *Jala*, burned + *pahár*, a hill. 'The burned hill.'  
This accounts in part for the presently bare condition of this hill.

GÍDHA PAHÁR = H. *Gídh*, a vulture + *pahár*. 'The vulture's hill.'  
Here great numbers of vultures infest the rocky cliffs overlooking the plains.

### THE PASS NAMES.

The names of the mountain passes are all of Tibetan origin. The term ལ་ *la*, or pass is often loosely applied to the mountain itself. The following list comprises most of the passes:—

DONG-KHYA LA (*Ang.* Donkia) = འབྲང་ *hbrong* (*pr.* dong), the wild yak + རྩ་ལྔ་ *khyags*, frozen + ལ་ *la* = 'the frozen yak pass.'  
A herd of wild yaks, in attempting to spend the night in this pass (18,100 feet high), were frozen to death.

SÍ-BU LA = སྐུ་བུ་ *sil-bu*, cold. 'The cold pass'—the greater part of the way is under snow.

THANG-KAR LA (*Ang.* Tanka) = ཐང་ *thang*, a field + དཀར་ *dkar*, white. This pass presents a field-like expanse of snow, all the year round.

JO-LA (*Ang.* Chola) = རྒྱལ་ *lord*. 'The lordly pass,' said to be so called on account of its height and difficult approach. An alternative etymology is མཚོ་ *mtsho*, a lake. Numerous lakes are in this pass.

YÁK LA = གཡག་ *gyag*, the yak (*Bos grunniens*). The pass for herds of yaks into eastern Sikkim.

YUM-TSHO LA = ཡུམ་ *yum* respectful title for 'mother' + *mtsho*. 'The lake of our (holy) mother,'—a nymph who is worshipped here.

RÍ-SHIK LA (*Ang.* Rishi) = རི་ *rí*, mountain + ཤིཁ་ *shik*, slipping or falling. The pass has appearance of a landslide.

YÁK CHHÖ LA = yak + གཅོམ་ *gchhor*, tired. A steep pass—a stage for 'tired' laden yaks proceeding above Lachhung.

DSE-LEP (*Ang.* Jelep) = མཇེ་ *lovely* + ལོལ་ *level*. 'The lovely level pass', with reference to its ease and patency.

NAK-PO or NA-KO LA = ནག་པོ་ *nagpo*, black. An unsnowed pass.

KU-PHU (*Ang.* Kupup) = སྐུ་ *sku*, the body especially of a saint + *phu*, a summit. Tradition relates that the saint Guru Rim-bochhe (*Padma Sambhava*) rested here, in passing to Tibet.

TUK-LA (*Ang.* Tukola) = གུག་ *gtug*, to tear or pluck off. Tradition states that the Pass was created by Guru Rimboche tearing off a portion of the rock to hurl at a demon who infested a lake in the vicinity to the annoyance of passengers.

DÜ-LA = བདུད་ *bdud* (*pr.* dü) a demon. 'The devil's pass'.

KU-CHAK LA (*Ang.* Quiche) is said to be derived from *ku* a lock, or *kug* crooked = 'the locked pass.' It is a difficult snow-locked pass.

RÔ-BANG LA (*Ang.* Rabong) = རོ་ rô, a carcass + བང་ bang, a grave. In the pass is an old *mendong* grave-cairn.

LA-CHHEN = la + chhen, 'the great pass.' The longest pass into Sikkim from the Tsang province of Tibet.

LA-CHHUNG = la + ཆུང་ chhung, small. 'The short pass' from Tsang into Sikkim.

### NAMES OF GÖMPAS OR MONASTERIES.

Sikkim having derived its Buddhism and civilization from Tibet, its monasteries mostly bear Tibetan names and these usually of an ideal or mystic nature. The word རྒྱལ་པ་ *dgon-pa*, pronounced *gömpa* literally means 'a hermitage,' and the oldest monasteries were, and many of them (*e. g.*, Dub-de, Sang-nga-chhö-ling, Pema-yang-tse, &c.,) still are situated in solitary places; but around some of the others, villages have gradually sprung up, and those of the most recent ones have been founded within villages from which they take their name, which in such cases is usually of Lepcha origin, *e. g.*, Ram-tek, Ling-tâm.

DUB-DE = རྒྱལ་པ་ *sgrub* (*pr.* 'dub,') a hermit's cell + སྡེ་ *sde*, a place. 'The place of the hermit's cell'—the oldest monastery in Sikkim founded by the pioneer missionary Hla-tsün Chhen-bo.

SANG-NGA-CHHÖ-LING (*Ang.* Sangachiling) གསང་ རྒྱལ་ *gsang*, secret or occult, + སྒྲུབ་ *sngags*, spell or magic + ཆོས་ *chos* religion + རྒྱུང་ *gling*, a place. 'The place of the occult mystic religion.' A catholic Buddhist monastery open to all classes, including deformed persons, nuns, Lepchas and Limbus.

PEMA-YANG-TSE (*Ang.* Pemionghi) = པད་མ་ *padma* (*pr.* 'péma') a lotus + རྒྱལ་ *yang*, perfect or pure + རྩ་ *rtse*, the highest 'the monastery of the sublime perfect lotus (-born one, *i. e.*, *Padma Sambhava*). A monastery open only to pure, celibate,\*

\* This condition is now satisfied by disallowing the residence of priests' wives within the precincts of the monastic establishment.

and undeformed monks (= Tasang) and especially associated with Guru Rimbochhe who is worshipped here.

TA-KA TÂSHI-DING (*Ang.* Tashiding) = བླ་མ་ brag (= tag,) a rock + དཀར་ dkar, white + བསྐྱེད་ bkra-shis (*pr.* tá-shi) glory + རྒྱུང་ lding, a soaring up or elevation. 'The gömpa of the elevated glorious white rock.' The site, a bold high promontory at the junction of and between the Great Rangít and Ratong rivers, is believed to have been miraculously raised up by Guru Rimbochhe, and amongst other traces a broad longitudinal white streak in the rock is pointed out as being the shadow of that saint.

PHO-DANG (*Ang.* Fadung) = ཕོ་བླ་མ་ pho-ltang, a sloping ridge; such is the site of this gömpa and the usual spelling of the name. As, however, this is the 'chapel-royal' of the rájá, it seems possible that the name may be ཕོ་བུ་མ་ pho-dang = palace, 'the gömpa of the palace.'

LA-BRANG (La-brang) = ལྷ་ bla, a contraction of *lama* or high-priest + བླ་མ་ brang, a dwelling. Here is the chief monk's dwelling. *N. B.*—This is one of the very few words in which *br* is literally pronounced as spelt.

DORJE-LING (*Ang.* Darjeeling) = དོར་ཇེ་ rdô-rje 'the precious stone' or ecclesiastical sceptre, emblematic of the thunder-bolt of Sekra (Indra or Jupiter) + གླིང་ gling, a place. The monastery from which Darjiling takes its name, and the ruins of which are still visible on Observatory hill, was a branch of the Dorjeling, usually curtailed into Dô-ling (*Ang.* Dalling) monastery in native Sikkim; and to distinguish it from its parent monastery, it was termed *Wang-dü* Dorje-ling (དབང་པོ་ dwang, power + བརྒྱུད་ bdus, accumulated or concentrated) on account of its excellent situation, and powerful possibilities.

DE-THANG = *De*, a kind of tree (*Daphne papyraceae*, Wal.) from the bark of which ropes and paper are made + ཐང་ thang, a meadow = 'the gömpa of the *De* meadow.' Here these trees are abundant.

RÍ-GÖN (*Ang.* Ringim) = རི་གོང་ dgon, a hermitage = 'the hermitage hill.' It is situated near the top of the hill.

TÔ-LUNG = རྩ་ལུང་ rdo, a stone + ལུང་ lung, a valley. This valley is remarkably rocky, and avalanches of stones are constantly falling in showers.

EN-CHE = དེང་ཅེ་ dwen, (*pr.* en), a solitary place + ལེ་ lche, a tongue. A monastery on a tongue-shaped spur.



PHÉ'N-ZANG = ཕན་ phan, bliss or profit + བཟང་ bzung, excellent. The monastery of 'excellent bliss.'

KHA-CHÖ-PAL-RI (*Ang.* Ketsuperi) = མཁའ་ mkhah, heaven + རྟེན་ spyod (*pr.* chö) to accomplish or reach + དཔལ་ dpal, noble + ri = the monastery of 'the noble mountain of the Garuḍa (a messenger of the gods)' or 'of reaching heaven.'

MÁ-NI = མ་ཎི་ má-ní, a tablet inscribed with 'Om máni &c.,' a mendong. 'The gömpa of the mendong': here the gömpa was erected near an old mendong.

SE-NÖN = Se, a sloping ridge + རྩོད་ nön, depressed. Situation on a depressed sloping ridge. It is also spelt *gzigs* (*pr.* sí) seer or beholder, + མཚན་ mnön, to suppress; and in this regard it is alleged that here Padma Sambhava beheld the local demons underneath and kept them under.

YANG-GANG = རྩང་ yang, perfect, also lucky + སྒང་ sgang, a ridge. 'The monastery of the lucky ridge.'

LHÜN-TSE = ལྷུང་ lhun, lofty + རྩེ་ rtse, summit. 'The monastery of the lofty summit.'

NAM-TSE = རྩམ་ rnam, a division or district + rtse. 'Lofty division' one of the subdivisions of Native Sikhim, on the flank of Tendong. It is probable that this is a Lepcha name from *tsü* = 'Seat of Government,' as the site is a very old Lepcha one.

TSÜN-THÁNG (*Ang.* Cheungtham) = བརྩམ་ btsun, a queen; also 'respected one,' *i. e.*, a lama or monk; also marriage + ཐང་ thang, a meadow. This gömpa is situated overlooking a meadow at the junction of the Lachhen and Lachhung rivers. It may mean 'the meadow of marriage (of the two rivers),' or 'the meadow of the lamas,' or 'the meadow of the lady'—its full name as found in manuscript being བརྩམ་མོ་རིན་ཆེན་ཐང་ 'btsun-mo rin-chhen thang,' implies that the lamas would have the monastery derive its name from 'the precious Lady-(pig)' whose image is prominently displayed within the gömpa.

RAB-LING (*Ang.* Rawling) = རབ་ rab, excellent or high + རྒྱུ་ gling, a place. This monastery is situated on a high cliffy ridge.

NUB-LING (*Ang.* Nobling) = རུབ་ nub, the west + རྒྱུ་ gling = 'The gömpa of the western place or country.' It lies on the western border of Sikhim.

DE-KYI-LING (*Ang.* Dikiling) བདེ་ སྤེན་ bde-skyid, happiness +

gling = 'The place of happiness.' It is a rich arable site with extensive marwa cultivation.

RIN-CHHEN-PUNG (*Ang.* Ringkingpung) = rin-chhen, precious + pung, a heap or knoll, 'The precious knoll.' The soil is rich and fertile.

For names of other monasteries see under the heading of Village-names.

## VILLAGE AND OTHER PLACE-NAMES.

### *Lepcha Place-names.*

When the place-name indicates the site of a village the suffix *kyung* or *kyong* = 'village,' is added; and for a site without any existing village *lay-ang* = 'a place or tract' is added.

ALI-BONG (*Ang.* Lebong spur) = *a-li* a tongue + *a-bong*, mouth.

A tongue-like spur of land below Darjiling.

PA-DÁM-TAM (*Ang.* Badamtam) = *Pa-dam*, a large species of bambu (*Dendrocalamus Hamiltonii*, *N. et A.*) from which water-vessels ('chongas') and marwa jugs '*pa-hip*' are made: it grows only below 4,000 feet + *tám*, a contraction for *par-tám*, a level spot. 'The *padam*-bambu bank:' here formerly was a forest, the nearest to Darjiling, of this kind of bambu which is in much demand.

YOKRI-BONG = *Yokri*, India-rubber tree (*Ficus elastica*) here abundant + *bong*, (= Tibetan བཟོ་) a stump or foundation, hence also a residential site. A village founded among (the stumps of felled or simply among) 'rubber' trees.

KANKI-BONG = *Kanki*, the 'padma' tree (*Prunus puddum*, Roxb.) here abundant + *bong*.

KUNG-BONG = *Kung*, a (any) tree + *bong*.

KOL-BONG = *Kol*, a walnut tree, here abundant + *bong*.

PO-BONG = *Po*, a large kind of bambu + *bong*.

NAK-GRÍ (*Ang.* Nágri) = *Nak*, straight + *grí*, a high stockaded fort.

TUNG-SUNG = a stockade.

NAM-FOK = fat + hollow, 'the fat hollow.'

NAM-TSÜ (*Ang.* 'Namchi') = *Nam* fat + *tsü*, Government. 'The Government of the fat site.'

PA-ZOK (*Ang.* 'Pashok') = 'jungle.' Here the dense sub-tropical 'jungle' or forest of the Tista valley commences.

SANA-DA (*Ang.* 'Sonadah') = *Sana*, a bear + *da*, a lair = 'the bear's lair.' Bears are still in the neighbourhood.

TSONG-KYUNG = *Tsong*, the Limbu tribe + *kyung*, a village. A village founded and still mainly inhabited by Limbus.

RANG-MUK = *Rang* + *muk*, weeds. An old extensive clearing, now a tea-garden.

RANG-LOT (*Ang.* Rangliot) = *Rang* + *lot*, to return. This is the limit from which the Rangit flood waters returned.

MAHI-MAN-DAP = *Mahi*, (a corruption of Bengali মহিষ, *mahish*, a buffalo, + *man*, flesh + *dap* to obtain. A site of a market overlooking the tarai, to which buffaloes were brought up from Bengal and slaughtered for retail of their flesh.

TAK-VÔR (*Ang.* 'Tukvar') = *Tak*, a hook-thread + *vôr*, a fish hook: the land is curved somewhat like this, and the local Lepcha tradition asserts this origin for the name.

SHING-TÂM = *Shing*, a garden + *tâm*, a level spot.

SONG-KHANI = *Song*, copper, + *khâni*, Hindî and Parbatiyâ for a mine. A village where copper ore is mined.

GOK = narrow and difficult (of access): an old military post on a narrow promontory between the Great and Little Rangit and Ramam rivers.

RONG-LÍ = *Rong*, Lepcha + *lí*, a house.

JING-HLÂM or ZHING-HLÂM = *zhing*, weak, or poor soil + *hlam*, sloping. 'The sterile slope.' The soil of this locality has a sterile reputation.

SALLO-KUNG = *Sallo*, name of a kind of tree + *kung*, tree.

UNG-LAP = *Ung*, water + *lap*, a well. Here is a well, a most unusual feature in Lepcha villages, where the usual water-supply is from brooks.

KALÖN-PONG (*Ang.* 'Kalimpong') = *Ká-lön*, a king's minister (a term borrowed from the Tibetan + *pong*, a stockade. This was formerly the stockaded headquarters of a Kalön.

SU-VOK (*Ang.* 'Sivok') = *sü* or *sü-e*, a breeze or rush of cool air + *vok*, concentrated. The mouth of the gorge whence the Tista debouches into plains, and along which a strong breeze is ever present.

TSONG-TONG (*Ang.* 'Chongtong') = ? *Tsong*, an arrow + *tong*, a resting place. An arrow-head-shaped site at junction of two rivers, at an acute angle.

LONG-SONG = *Long*, a stone + *song*, resounding. A rocky site in the resounding gorge of Tista opposite junction with Great Rangit.

PA-KYONG = *Pa*, a kind of cane + *kyong*, village.

LING-TÂM = *Ling*, a slope, or hill side + *tâm*, level spot. A mixture of slope and level.

TING-KAP = *Ting*, a plain + *kap*, little. An unusually (for Sikkim) large meadow.

RAB-DEN-TSI = *Rap*, a collection + *a-den*, highest sect of Lepchas + *tsü*, law or government. This was the original seat of the Lepcha *pa-no* (rájá) before the influx of the Tibetan Barfungmos.

PAYONG-KANG = *Payong*, a species of bambu (*Cephalostachyum capitatum*, Munro) from which arrows are made + *kang*, a ridge.

PASHEN-BONG = *Pashen*, a tree-fern (*Alsophila latebrosa*, Hk.) + *bong*. Tree-ferns are here numerous.

SILIM (*Ang.* Selim) = a kind of tree (*Terminalia chebula*, Retz.) abundant at this site, the seeds of which are eaten.

SUM (Soom) = a tree (*Phyllanthus emblica*, Roxb.) the fruit of which is eaten.

SIRIM-PUNG = *Sirim*, Limbu name for a species of wild citrus + *pung* the Limbu form of *bong*.

HANG-MÁ-FUNG = *Hang-má*, Limbu name for a kind of tree with perfumed flowers + *fung*, a flower.

RAM-TEK = *Ram*, god + *tek*, gone. Local tradition states that the name was given to the site last occupied by their (Lepcha) chief on his deposition by the Bhotiyas, to express their misfortune.

YUK-SAM = *Yuk*, 'a superior' hence a *lama* + *sam*, three. The place of meeting of 'the three lamas' to choose a rájá for the Lepchas.

#### BHOTIYA PLACE-NAMES.

GANG-THOK (*Ang.* Guntok) = གང་ལོ་ *sgang*, a ridge + ཐོག་ *thok*, a peak, an eminence. 'The eminent ridge.'

KAR-THOK = དཀར་ཐོག་ *dkar*, white + *thok*, 'The white eminence.'

YANG-THÁNG = གཤམ་ཐང་ *gyang*, a precipice + *thang*, a field, 'the field of the precipice.'—A huge cliff overhangs this meadow-site.

ZAM-DANG (*Ang.* Samdong) = བཙུག་ཁང་ *zam*, a bridge + ལྷན་ཁང་ *lbrang*, a halting place, stage or dwelling.

MO-ME = solitary, a site (*circa* 16,000 feet) at the last bridge below the Donkya pass.

NA-THÁNG (*Ang.* Gnatong) = ལྗང་ཐང་ *nak*, black (or nags, forest) + *thang*. 'The black meadow,'—the first meadow on this side of the Jelep pass; it is black with pines.

LHÁ-BA (*Ang.* Labah) = ལྷམ་པ་ *lhaks-pa*, windy. A breezy site.

OJAK-KHA (*Ang.* Iche) = འོ་ཁ་ འོ་ཁ་ *O*, the previous name of the village + རྫོག་ཁ་ *jag-kha*, broken. So called after the road had been cut through it, dividing it into two parts.



CHHUM-NAGA, = *chhum*, water + *naga*, a grassy bank.

NAK-TSHAL (*Ang.* Naxal) = *མག་པོ་* nags, forest + *མཚལ་* tshal, a hunting grove.

BAR-FUNG = *འབྲུག་* *hbar*, burned, + *ཕུང་* *phung*, a collection or heap or knoll. 'The collection of burned sites or jungle clearings.' The oldest Bhotiya division in Sikkim.

AM-BI-OK = *am-bi*, a demon's shrine + *འོག་* *og*, below. A site below the shrine.

DAM-THANG = *ཐང་* *gram* (*pr.* *dam*) mud + *thang*, a marshy muddy meadow.

BÁ-KHYIM = *ba*, a kind of bambu used for making mats + *ཁྱིམ་* *khyim*, a house. A house of bambu matting—a halting stage on Tendong hill.

MING-MACHHEN = *Ming-ma*, a kind of bambu + *chhen*, large.

SEDONG-CHHEN = *Sedong*, name of a tree (*Albizzia*, sp.) + *chhen*, large. Here a halting stage for travellers at a large Sedong tree, an uncommon tree in Sikkim.

PHA-DOM CHHEN = *phá-dom*, a clearing + *chhen*. A largish clearing in jungle forming a halting place.

DÔ-LEP-CHHEN = *rdo*, a stone + *ལེབ་* *leb*, level or flat + *chhen*. A halting stage at 'a big flat stone.'

CHHUM-MIK CHHEN = *chhu-mik*, a spring + *chhen*, big. Here is a large spring.

KYO-SHING (*Ang.* Keuzing) = *Kyo* wheat + *shing*, field. 'The wheat field.'

TONG-TÖ = *ཐོང་* *stong*, a valley + *སྟོད་* *stod*, upper. A division of Sikkim comprising an upper valley.

PÖ-DANG (*Ang.* Pedong) = *pö* or *pö-ga*, a kind of cypress, also a *Sal* tree, of the gum of which incense is made + *འབྲང་* *hbrang*, (*pr.* *dang*) a halting-place. 'The halting-place at the Pö tree.'

PA-ZAM-KHA (*Ang.* Buxa) = *པ་* *spa*, cane + *མཚམ་* *zam*, a bridge + *ཁ་* *kha*, mouth. Name of a site at 'the mouth of the cane-bridge' leading into Bhutan.

#### PAHÁRIYÁ AND BENGALÍ PLACE-NAMES.

(P = Paháriyá, B = Bengali and H = Hindí.)

LAPCHE-JAGAT = P. *Lapche* the Lepcha + *jagat*, a toll-bar. A village on the Nepal frontier where the Lepchas levied toll on the Nepáli imports into Sikkim.

SUNGRI-TÁNŔ = P. *Sungar*, a pig + *tánŕ*, a jungle clearing. A halting stage of the Nepáli pig-drivers on their way to Sikkim.

SING-BUNG DERA = *Sing-bung*, Limbu for tree-stump + *dera* P. and Hindustaní for camp. A wood-cutter's camp.

CHILAUNI = P. *Chilauni*, a kind of tree with perfumed blossoms (*Schima Wallichii*); here abundant.

KAINJALIA = P. *Kainjal*, a kind of tree (*Bischofia Javanica*, Bl.); here abundant.

TAKTÁ-BÁS = P. तक्ता *taktá*, a plank + वास *bás*, a habitation. A wood-cutter's village in jungle where planks were stored for transit to Darjiling.

CHÚNA-BATÍ = P. चूण *chuna*, lime + बाती *bátí*, a lamp. A lime-kiln is here.

CHAILÁ-DURA = P. *chailá*, blocks of fire-wood + *dura*, a hut. A settlement of cutters of fire-wood.

BHOTIYA-BASTI = Bhotiya + बस्ती *bastí*, a residence. The Bhotiyas' village.

BÁTÁSI = P. बातसी *bátási*, windy. A breezy site.

SHEPI = P. शेपि *shepi*, to be wet or moist. A new village in a forest clearing where unusually dense dew falls.

MÁŦÍ-GHARA = P. माढी *máŦí*, mud + घर *ghara*, a house. The first mud-house met with at the foot of the hills (the houses in the hills being built of stone or wood).

NÚŦA-MÁŦÍ = P. नूण *nuna*, salt + *máŦí*, earth. Here is a 'salt-lick.'

CHETE-DHÁRA = P. *cheten*, a Buddhist *chaitya* + धार, *dhára*, a ridge. Here on the ridge is a *chaitya*.

GUMTI = P. a turn of the road. Site in the angle of a turn of the road.

PUL-BÁZÁR = Hindust. *pul*, a bridge + P. and H. बाजार *bázár*, a permanent market. A market at bridge over Little Rangit.

JOR-POKHRÍ = P. जोड़ *jor*, a pair + पोखरी *pokhrí*, a small pond. Here are two small ponds.

SUKHÁ-POKHRÍ = P. सुखा, *sukhá*, dry + *pokhrí*. A small semi-dry pond.

KÁLÁ-POKHRÍ P. = काला, *kálá*, black + *pokhrí*. A small pond with dark peaty water.

BAHMAN-POKHRÍ = B. Bahman, a Bráhmaṇ + *pokhrí* = 'The Bráhmaṇ's tank.'

JOR-BANGALÁ = P. *jor*, a pair + *bangalá*, the Bangala (Bengali) style of a European's house. Formerly there were only 'two bungalows' here.

LAMBÁ-DHARA = P. लम्बा *lambá*, long + *dhara*. Here a long ridge.

LÁMÁ-GAON = *Lámá*, superior monk + गाँव *gáṇv*, a village. Formerly a lama's residence.

SIPÁHÍ-DURA (*Ang.* Sepoy-dura) = *Sipáhi*, a native soldier + P. *dura*. The 'lines' of the pioneer Sepoys now disbanded.

KUÁ-PÁNÍ = P. कुआ, *kuá*, a well + पानी *pání*, water. No stream near, hence villagers had to dig a well, an unusual source of water-supply in the hills.

GORU-BÁTHÁN = P. गोरु *goru*, a cow + बाथान, *báthán*, from Skt. वस *bas* to dwell + *sthán*, a place. A grazing station.

SÍMANA = P. सीमन, *símana*, a boundary. A village on the Nepal frontier line.

PÁNÍ-GHÁṬA = P. *pání*, water, + घाट *gháṭa*, a ferry or ford. The ford over Balasan at foot of hills.

PÁTHAR-GHÁṬA = H. पाथर *páthar*, a stone + *gháṭa*, a ferry. The ferry on the Mahananda where stones are gathered for road-metal.

SILI-GURÍ = P. and Skt. शिल, a stone + P. *guri* from Skt. गढ़ी *garhí*, a small fort. 'The stone fort.' The furthest out site from the hills where stones are locally available for building.

TARÁI = P. and H. तराइ, *tarái*, a swamp, or marshy tract.

TARIYANA (*Ang.* Tirihana) = a form of above.

DWÁR (*Ang.* Dwar) H. B. and Skt. द्वार *dwár*, a door, or passage. 'The door or entry (to the hills).' The broad shallow valleys leading from plains into the hills.

KAMÁN, the ordinary name used among the hill-coolies for tea-gardens. It seems to be the *Parbatiyá* word meaning 'to earn money,' from the same root as the H. कामाना *kamáná* 'to work for hire.'

SANYÁSÍ-THÁN = *Sanyási*, a religious mendicant + B. थान *thán*, 'the place, usually a shrine. Here it is a *Sanyási*'s hut.

DAWÁI-PÁNÍ = B. and H. *dawái* medicinal + *pání* = 'Mineral spring.' Here is a chalybeate spring.

BÁGH-DOKRÁ = B. बाघ *bágh*, a tiger + *dokrá*, roaring. A village in the Tarái in a locality infested by tigers.

BAIRÁGÍ-BHÍTA = B. and H. *Bairági*, a religious mendicant + *bhíta*, a plot of land. 'The mendicant's plot.'

DÁNGAR-BHÍTA = B. and H. *Dángar*, a hill-man + *bhíta*. Here a settlement of some Uraon hill-men.

HÁTHÍ-PÚBA = H. and B. *háthí*, an elephant + डूब *ḍúba*, to immerse. A marshy tract which elephants could not cross.

RÁJÁ-JHAR = H. and B. *Rájá* + फाड़ *jar*, a jungle. 'The king's forest.'

GHORÁ-MÁRÁ = H. and B. घोड़ा *ghordá*, a horse + *márá*, killed. A local tradition states that a horse was killed here by a tiger.

BHAIŃSÍ-MÁRI = H. and B. भैस *baiṅsa*, a buffalo + मारि *mári*, killing.

MAHISH-MÁRI = B. महिष, *mahish*, buffalo + *mári*.

GÁI-BÁRÍ (*Ang.* Gayabárá) *gái* or *gái*, cow + बाड़ी *bári*, a habitation = cow-shed.

SÁL-BÁRÍ = B. and H. *sál*, the valuable timber tree (*Shorea robusta*) + *bári* = 'The *Sal*-grove.'

ÁLU—, ÁM—, CHAMPA—, KAMLÁ—, PHUL-BÁRÍ = B. and H. *álu*, a yam or potatoe, *ám*, mango, *champa*, the champak-tree, *kamlá* (the citron) tree, *phul*, a flower + *bári*, a habitation—hence as regards vegetables, a grove or garden.

SUKNÁ = B. सुकना *sukná*, dry. A dry site in Tarái on plateau at base of a spur where water-level is relatively low.

#### THE GENERAL IMPORT OR MEANING OF THE NAMES.

The above lists of names with their etymological definitions, although not exhaustive, suffice to show the manner in which place and river-names are assigned in this area. The great majority of the names are given by illiterate persons, so that grammatical accuracy is not always to be expected. The names, as to their meaning, may be generally classed as descriptive; a few are mythological and religious, but these are chiefly confined to monastery names; and the personal designations perpetuating the names of the founders of villages are found almost exclusively amongst the Paháriyá settlements.

*Names mostly descriptive.*—The descriptive names predominate, and these usually well express some very obvious physical feature of the site or river, *e. g.*, of rivers, an especial tortuosity, steepness, impetuosity, shallowness or otherwise of a course or channel; of mountains, their shape, appearance &c.; of village sites, the stony, precipitous, meadow-like character, quality of soil, jungle-product, conspicuous tree &c.

*Names of the country.*—In naming the country, both the Lepchas and Bhotiyas characterized the most striking feature of the country, each from their own respective point of view. The Lepchas, a roving forest-people, even still living largely on jungle-products and sleeping under rocks for shelter, called this country Ne-layang or 'the country of caves,' while the Bhotiyas, a much more pastoral and agricultural race, who came from across the Himálayas, where rice is highly prized as food, but not there growable, called the country འབྲས་ལྗོངས་ *hbras-ljongs*, pronounced Dé-jong\* or 'the rice-country,' as rice is abundantly cultivated in Sikkim. These Sikkim Bhotiyas in the course of the three or four

\* As *de* is a form of *demo* དབེ་མོ་ = good, although the name of the country is not spelt in this way, it is occasionally called 'Demo-jong,' *i. e.*, 'the happy or good country.'



centuries which have elapsed since migrating from Tibet, have acquired\* a dialect which differs in many ways, but chiefly in pronunciation, from the polite speech now prevalent at Lhasa. One feature of this difference is the tendency, shared in common with the Tsang-pa Bhotiyas of Nepal, and already noticed, to insert a final *n* where such does not appear in Tibetan. The country has thus come vulgarly to be called Dén-jong, instead of Dé-jong, and the people generally call themselves Dén-jong-pa, *i. e.*, 'the people of Den-jong.' And the Lepchas in accepting the name imposed by their conquerors usually pronounce it Ren-jong—*r* being with them frequently interchangeable with the letter *d*.

The etymology of the modern name of 'Sikkim' is not at all so clear. It is generally alleged by the Lepchas and Bhotiyas to be a Parbatiyá name, applied to the country by the conquering Gorkhas. As the great majority of the Parbatiyá words are derived almost directly from the Sanskrit, I venture to suggest that the most probable derivation is from the Sanskrit शिखिन् *Sikhin* = crested: this would characterize the leading feature of the approach from the Nepal side—a long high ridge, with Kanchinjunga 28,000 feet and Kabur 22,000 feet in its middle, separates this country from the Gorkha territory; and being shut off from Bhotan by another high ridge, the intervening narrow tract which constitutes Sikkim presents within itself an unusual number of ridges (crests) running more or less in N. to S. direction, transverse to the vista from Nepal.†

Many of the place-names merely denote halting places or stages presenting a rock-shelter or a clearing in the jungle with water-supply near, and occasionally pasture. These sites, being on lines of communication and always near a water-supply, occasionally develop into villages. These names were probably given by Tibetan merchants or other travellers such as priests or monks. The process of such name-giving might arise through a pioneer merchant or other traveller, narrating the stages of his journey into 'the rice country' (Dejong) and his successors adopting his stages and nomenclature. Such a traveller might be supposed as saying that, on crossing 'the level track pass'

\* In some instances the difference appears due to preservation of ancient forms of speech rather than a new development, or corrupt dialect.

† This name is not at all likely to be related to Skt. शैक, *sek*, to wet or moisten, for the climate of Sikkim does not appear to be more moist than that of the adjoining portion of Eastern Nepal. Nor does the conjecture seem tenable that it is a Parbatiyá translation of one of the vulgar forms of the Bhotiya name for the country, *viz.*, 'Demo-jong' or 'the happy country' from सुखी *sukhi*, happy; as the name is never spelt or pronounced with *u*, and the country was, and still is, a most inhospitable one.

(Je-lep-la), he passed the 'Saints' mount' (Kuphu) and 'the Guru's defile'\* and reached 'the black meadow' (Na-thang) where he halted. Next day he proceeded down 'the steep descent' (Lung-thu), past 'the big clearing' (Phadom chhen), to the large Sedong tree' (Sedong chhen). Next day, continuing the descent, he crossed 'the water (chhu) at 'the Lepcha's house (Rong-li) and ascended to 'the big flat stone' (Dô-lep chhen) where he halted. The following day he crossed 'the black hill' (Ri-nak) and 'the mountain torrent' (Ri-ze chhu), and ascended to 'the Pö-tree halting place' (Pö-dang). Next day continuing his march, he lunched at 'the big spring' (Chhu-mik chhen), and crossing the ridge at the junction of 'the three hills' (Rî sum), reached 'the Kalön's stockade or 'pong' as the Lepchas call it (Kalön-pong), &c., &c.

The Paháriyás and Bengalis are addicted to giving a personal name to their villages; this is perhaps inevitable where the area, as is usual in such cases, is thickly populated, and presents no striking natural features. The Paháriyás share with Europeans the tendency to transplant to their adopted home, names taken from their old country, although these possess no local appropriateness in their new application.

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*On the date of the Bower Manuscript.*—By A. F. RUDOLF HOERNLE.

The Bower manuscript was exhibited to the Society at the two meetings in November, 1890 and April, 1891. I call it the "Bower MS.," in order that Lieutenant Bower, to whose enterprise the learned world owes the preservation of the manuscript, may receive the honour due to him. Some account of the locality and circumstances of its finding will be found in the Society's *Proceedings* for November, 1890; and a preliminary account of the manuscript and its contents was published by me in the *Proceedings* for April, 1891. Since then I have spent a long summer vacation in carefully examining the whole manuscript, and, with the exception of a few leaves, I have read and transcribed the whole. I have every reason to hope that the Bengal Government, with its usual liberality in such matters, will enable me to publish a complete edition of the manuscript which I am now preparing.

This paper had been written (in Darjiling, in May), when I received (in July), through the kindness of Professor Bühler in Vienna, an advance copy of his notice† of the specimen pages of the Bower MS.,

\* *Vide* detailed definitions at p. 60.

† To be published apparently in the *Vienna Oriental Journal*.

which were published in the November *Proceedings*. It was particularly gratifying to me to find that, reading the manuscript, he in Vienna and I in Calcutta, at about the same point of time, we independently arrived at essentially the same conclusions, both with regard to the age and the contents of the manuscript. Such a coincidence most distinctly makes for the truth of our conclusions.

The substance of the paper which I now publish on the age of the Bower MS., and which I promised in the April *Proceedings*, was originally intended by me to form a part of the introduction to my edition of the manuscript. But seeing the interest which the manuscript has already excited in Europe, I publish it now in anticipation, and hope similarly to publish portions of the manuscript, with translations, from time to time.

I may state here briefly the result of my detailed examination of the manuscript. It consists of not less than five distinct portions.

The first portion consists of 31 leaves. It contains the medical work of which I have published the commencement in the April *Proceedings*, and two pages of which are figured in the upper parts of the two plates accompanying the November and April *Proceedings*. I shall designate it by the letter A.

The second portion, to be called B, which immediately follows the first portion, consists of five leaves, and forms a sort of collection of proverbial sayings. A specimen of it is figured in the lower part (No. II) of the plate in the April *Proceedings*.

The third portion, C, consisting of four leaves, contains the story of how a charm against snake-bite was given by Buddha to Ananda while he was staying in Jetavana, the garden of Anáthapiṇḍa. A specimen of this portion is figured in the lower part of the plate in the November *Proceedings*.

The fourth portion, D, consists of six leaves. It is preserved in a rather unsatisfactory condition, and appears to contain a similar collection of proverbial sayings as the second portion, B.

The fifth portion, E, which also consists of five leaves, contains the commencement of another medical treatise. It appears to be—so far as I can judge at present—a fragment of a larger work.

Besides these five connected portions, there appear to be a few detached leaves, quite unconnected with one another and with those larger portions.

Of the fourth and fifth portions no specimens have been published, but the fifth is written in the same style as the first portion. The fourth portion is written in an exceedingly slovenly and hurried hand, much resembling that of the third portion, but written far more slovenly. It may possibly represent the handwriting of a fourth scribe; though, on



the whole, I am disposed to believe that there are really only three distinct styles of writing represented in the entire manuscript. The first is that of the first and fifth portions (A and E); they are so nearly alike, that I believe them to be of the same scribe. The second is that of the second portion (B), which is a fine, ornamental writing. It must be ascribed to a distinct scribe. The third is that of the third and fourth portions (C and D), which seem to me to differ more in the manner than in the character of writing, and may not improbably be due to the same scribe, though a different person from the scribes of AE and B.

I come now to the question of the age of the MS. Here the first points to be settled are the locality and class to which the characters of the MS. belong. Mr. Fleet has clearly shown, in his Volume III of the *Corpus Inscriptionum Indicarum* on the Gupta Inscriptions,\* that, irrespective of varieties, there existed, at the time of the Gupta period, two very distinct classes of the ancient Nāgarī alphabet, the North Indian and the South Indian (see Fleet, pp. 3, 4). The test letter for these two great classes is the character for *m*, which in the Southern alphabets retains its old form ॡ, resembling the figure 8, while in the Northern alphabets that old form has been displaced by a square cursive form 𑀓. Tried by this test, it is at once seen that the alphabet of our MS. belongs to the Northern class. Throughout the MS. the square form 𑀓 is used exclusively. It is particularly distinct in the portions C and D; in ABE the left hand curved line in drawn rather more straight.

The Northern class of alphabets, however, is again divided into two great sections, which, though their areas overlap to a certain extent, may be broadly, and for practical purposes sufficiently, distinguished as the Western and Eastern sections. The test letter in this case is the cerebral sibilant *sha*. In the North-Eastern alphabet its form is 𑀕, while in the North-Western alphabet its form is 𑀔.† Examples of the former alphabet we have on the Allahabad pillar inscription of Samudra Gupta, of about 400 A. D. (Fleet, pp. 1, 6), the Kuhaun pillar inscription of Skanda Gupta, of 460 A. D. (Fleet, p. 65), and others in Mr. Fleet's volume.‡ The same alphabet is shown to perfection in the

\* All subsequent references to "Fleet" refer to this work.

† At the same time the Indian N. E. alphabet has the form 𑀕 for the dental *sa*, the two forms of *sha* and *sa* being very little distinct from one another. The Indian N. W. alphabet has 𑀔 for *sa* which is also used by the Nepalese variety of the N. E. alphabet.

‡ The following Nos. in Mr. Fleet's volume belong to this class: Nos. 1, 6, 7, 8, 9, 11, 12, 13, 15, 64, 66, 68, 69; occasionally the Western form is used in conjuncts, such as *ksha*, *shṣa*.



Nepalese inscriptions, Nos. 1 to 10 and No. 12, published in the *Indian Antiquary*, vol. IX, p. 163; also in the Nepalese inscriptions Nos. 1 and 2, in Mr. Bendall's *Journey in Nepal*, pp. 72, 74. On the other hand, the other Nepalese inscriptions in vol. IX of the *Indian Antiquary*, Nos. 11, 13, 14, 15, and in Mr. Bendall's *Journey*, Nos. 3 to 6, exhibit the North-Western alphabet. The latter alphabet is also to be seen in all the Nepalese MSS., described in Mr. Bendall's *Catalogue of Buddhist Sanskrit MSS.*, including the two oldest, Nos. 1049 and 1702.

Examples of the North-Western alphabet in Mr. Fleet's volume are the Mathurá stone inscription of Chandra Gupta, of about 400 A. D., the Indor plate of Skanda Gupta, of 565 A. D., and others.\* Also the Toramána inscription in the *Epigraphia Indica*, Vol. I, p. 238, and the Nepalese inscriptions above mentioned.

In both the North-Eastern and North-Western sections there are divisions into varieties, some of which Mr. Fleet has noticed. However for my present purpose, there is no need to enter into any consideration of these. But the distinction of the two great sections is very marked, and can never be missed when once pointed out.

There is one point, worthy of notice, with regard to these two great Northern divisions. It is this, that in India proper the North-Eastern alphabet gradually came to be entirely displaced by the North-Western alphabet, in comparatively very early times. This displacement must have been in progress during the earlier part of the sixth century A. D., and must have been completed about 580 A. D. For in 588 A. D. we already find inscriptions in Bodhgayá (of Mahánáman, Fleet, p. 274) which show an exclusive North-Western character; and there is not a single inscription known (so far as I am aware) about and after 600 A. D. which shows the distinctive marks of the old North-Eastern alphabet. Outside of India proper, that is in Nepál, the North-Eastern alphabet maintained its ground for about three centuries longer; for the inscription, No. 4 in the *Indian Antiquary*, vol. IX, dated in 854 A. D., still shows the use of that alphabet. This survival is accounted for by the fact, that the North-Western alphabet made its way into Nepál, apparently, about a century later than into Eastern India proper. For the earliest known inscription, in that alphabet, is No. 11 in the *Indian Antiquary*, vol. IX, which is dated in 653 A. D. For the purpose of manuscript writing, as distinguished from documentary inscription, the North-Western alphabet probably made its way into Nepál very much earlier, as shown by Mr. Bendall's old MS. No. 1049, if (as I think it may well be) it is dated in 252 of the Gupta Era, that is, in 571 A. D.

\* The following Nos. belong to this class: Nos. 4, 10, 16, 19, 20, 22—37, 42, 43, 46—54, 58—61, 63, 65, 67, 70—72, 74, 76.







Now the *Bower MS.* is distinctly written throughout in the North-Western alphabet. This is an important point and must be kept in view throughout the following enquiry. The age of our MS. must be judged solely by the facts as disclosed by the circumstances of the North Western alphabet. No conclusion that can be drawn from circumstances connected with the South Indian or the North-Eastern alphabets may be applied to the determination of the age of our MS. For it stands to reason, that no scribe, who was habituated to write in the North Western alphabet, would in any writing of his habitually introduce any peculiarity of the South Indian or North Eastern alphabets, with which he was not familiar.

Having premised this much, I proceed to the consideration of the points that appear to me to afford the means of determining approximately the date of the *Bower MS.*

Among the existing varieties of the North-Western alphabet, there is one which has most nearly retained its ancient character. This is the so-called *Sáradá* alphabet, which is still current in Káshmir and the adjacent Sub-Himalayan provinces, such as the Chambá and Kángará valleys. The most striking point of difference between the *Sáradá* alphabet and its more ancient parent, the original North-Western alphabet, is the sign for the letter *ya*. The *Sáradá* alphabet uses the modern cursive form *य*, while the original North-Western alphabet employed the more ancient tridential form *𑀭*. This is the test letter by which any inscription or manuscript written in the *Sáradá* characters may be at once distinguished from any inscription or manuscript written in the more ancient North-Western alphabet. The latter I shall, for the sake of convenience, briefly distinguish as the Gupta alphabet. The oldest MS. in the *Sáradá* characters, of the existence of which we know, is the so-called *Horiuzi MS.*, of which Professor Bühler has published an account and illustrative plates, in Volume I, Part III of the *Anecdota Oxoniensia*.\* According to him, "it is certain that this MS. cannot date later than the first half of the sixth century A. D." (*ibid.*, p. 64). It employs throughout the modern cursive form of *ya*. On the other hand, the *Bower MS.*, though showing in the writing of parts A and E, in many respects, a very decided resemblance to the *Sáradá* characters, employs in the portions BCD exclusively, in AE almost exclusively, the older tridential form of the letter *ya*. It follows, therefore, that the *Bower MS.* is not written in the *Sáradá* alphabet, but in the more ancient

\* "*Sáradá*" is the name of a small group of alphabets, the varieties of which differ a little according to locality (Káshmir, Chambá, etc.) or period or material of writing, etc.; but the essential unity of the group is well known, and it is usual to call it *Sáradá*.

*Gupta alphabet.* The general similarity of its letters to the Śāradā probably shows, that the locality of its writing was somewhere in the extreme North-West of India, but *its use of the ancient tridential form of YA shows that its date must be antecedent to the elaboration of the Śāradā form of the North-Western alphabet.* When this event took place, I shall now attempt to show.

The old form (though not quite the oldest which was ) of the letter *ya* was  or . It was made by two separate movements of the hand, one for drawing the left-hand perpendicular, the other for drawing the remaining portion of the letter. The next step was an attempt to draw the letter with one movement of the hand. This led to the contrivance of the form , by which the end of the left-hand crook or loop was brought forward to the point of junction of the perpendicular and horizontal portions of the letter. It was now possible to draw the letter with one stroke of the pen, beginning with the top of the left-hand perpendicular, downwards; then round the loop, from left to right, to the bottom of the perpendicular; than finishing with the right-hand crook or angle. This change was clearly due to the convenience of cursive writing. But the tendency of cursive writing to quickness and economy of effort very soon led to a further change, which produced the form , by severing the point of junction. This was the final form of the process; it is still essentially the modern cursive form. The intermediate form , as I shall presently show, only existed for a comparatively very short time, and is essentially a mere transitional form.

It is a well-accepted fact that cursive forms first make their appearance in manuscript writing, and may be, and generally are, in use in MS. writing some time before they are introduced in the inscribing of documents on stone, copper or other material. Such documents are of a conservative nature; they have a tendency to preserve old forms, after they have long disappeared from ordinary MS. writing. The common or exclusive use, in an ordinary MS., of a distinctly archaic form is, therefore, a safe means of determining its age.

The old form of the letter *ya* was once current in all the alphabets of India. In all of them it gradually became displaced by some cursive form. But this displacement did not take place in all of them at the same point of time. In the South Indian alphabet it survived, at least in inscriptions, down to the twelfth century A. D.\* The North-Eastern alphabet,

\* In the old Kanarese, where it much resembles the later Nepalese form with the ringlet attached to the left prong (see p. 85). See, *e. g.*, the Eastern Chalukya inscription of 1134 A. D., in the *Ind. Ant.*, vol. XIV, p. 50, or the Kákatiya inscription of 1162 A. D., *ibid*, XI, p. 9. It has now passed into the various modern cursive forms of the South-Indian alphabets.



as I have already remarked, was, in India proper, as early as the middle of the sixth century, superseded by the North-Western alphabet; but in Nepál it survived about three centuries longer, and there, with it, the old form of *ya* survived, at least in inscriptions, down to the middle of the ninth century A. D. It should be noted, however, that the old form of *ya*, in the shape in which it survived in Nepál, is somewhat different from the old form in its original shape, as it was once current in the North Indian alphabets. Its original shape is that of a sort of trident, of which the left-hand prong makes a curve or even a loop, thus *Y* or *Y*. In the Nepalese shape, the curve or loop, is replaced by a ringlet which is poised on the top of the left-hand prong, thus *W*.\* The difference is marked, and the two shapes can be very easily distinguished from each other.

The North-Western alphabet is the first to discard the use of the old form of *ya*. From it, as I shall presently show, the old form disappeared, even in inscriptions, as early as the end of the sixth century A. D.; and from cursive writing in that alphabet, according to the well-known rule, above stated, it must have disappeared much earlier. There is an obvious conclusion, which is suggested by these facts; it is, that *the invention, so to speak, of the cursive form of YA took place in the North-West of India, somewhere within the area in which the North-Western alphabet was current.*

The first document from which the use of the old form has entirely disappeared is the long Bodhgayá inscription of Mahánáman of 588 A. D. (Fleet, p. 274). It uses exclusively the transitional form, with one or two exceptions in which the modern form itself is used.† In another short Bodhgayá inscription of Mahánáman, of about the same date (Fleet, p. 278); the modern form is used exclusively. *In fact, after 600 A. D., there is no inscription known, which shows any trace of the survival of the old form.* In all of them the cursive form of *ya* is fully established in exclusive use; thus in the Lakkha Mandal inscription of about 600 A. D. (*Epigr. Ind.*, vol. I, p. 10),‡ the Madhuban inscription of Harsha, of 631 A. D. (*ibid.*, p. 67), the Apsad and Sháhpur inscriptions of Adityasena, of about 672 A. D. (Fleet, pp. 200, 208), the Deo Baranark inscription of Jivita Gupta, of (about) 725 A. D. (Fleet, p. 213), the Sárnáth inscription of Prakatáditya of somewhere in the seventh century (Fleet, p. 284). To these may be added the evidence of those Nepalese inscrip-

\* See, e. g., the inscription No. 8, in the *Ind. Ant.*, vol. IX, p. 171.

† The transitional form is here used with a somewhat modified and more ornate shape.

‡ The intermediate form occurs twice in this inscription, in *yena*, ll. 6 and 11, curiously enough, with the vowel *e*, on which see page 89.



tions, which are not written in the North-Eastern or proper Nepalese alphabet, but in the North-Western characters; thus the Gaidhára inscription of 688 A. D. (see Mr. Bendall's *Journey in Nepal*, p. 77), the Jaisí inscription of 751 A. D. (*ibid.*, p. 79), the inscription of Siva Deva, of 748 A. D., another of 750 A. D., and the inscription of Jayadeva, of 758 A. D. (see *Indian Antiquary*, vol. IX, pp. 176-78). In all these inscriptions the modern cursive form is used exclusively.

Another piece of evidence, in the same direction, is the Tibetan tradition respecting the introduction of the Northern Indian alphabet into Tibet (see *Journal, Asiatic Society of Bengal*, vol. LVII, pp. 41 ff.). It is said that these characters were introduced into Tibet by the sage Sambhoṭa, who brought them from Magadha, where he had resided from A. D. 630-650. These characters are known in Tibet as the "Wartu" characters of Magadha; their forms, as traditionally preserved in Tibet, may be seen in Plate I of the *Journal (ibidem)*; and it will be seen that among these the letter *ya* has the cursive form. This shows that at the time of Sambhoṭa's visit to Magadha, in the second quarter of the seventh century A. D., the cursive form of *ya* was in current use in North India.\*

*I am not aware of the existence of a single dated inscription in North India, written in the North-Western alphabet, which indubitably proves any use, still less the exclusive or almost exclusive use of the old form of YA, after 600 A. D.* It follows from this evidence that, since the old form of *ya* had entirely disappeared from inscriptions, from the end of the sixth century (say from about 580 A. D.), it must have disappeared from the cursive writing of ordinary manuscripts long before. Accordingly a manuscript, like the Bower MS., in which the old form is still used almost exclusively, must be placed long before the end of the sixth century, and much nearer the beginning of it.

This conclusion is fully supported by the evidence of all the ancient dated (or practically dated) MSS. that are, as yet, known to exist. The oldest is the Horiuzi MS. The date of its writing has been shown by Professor Bühler to be somewhere in the middle of the sixth century,

\* The "Wartu" characters exhibit in all test points the characteristics of the North-Western alphabet. This shows, what I have already observed (*supra*, p. 82), that the North-Eastern alphabet, which was once current in Magadha, was there in very early times displaced by the North-Western alphabet. It is said, however, that Sambhoṭa only "partly" adopted the "Wartu" characters for his Tibetan alphabet (*Journal, ibid.*, p. 41). This explains the fact that the "Wartu" or cursive form of *ya* does not appear in that alphabet. For the letter *ya* that sage appears to have drawn on the North-Eastern alphabet, which he must have known from Nepál, where (as I have shown) it maintained its ground from two to three centuries longer than in Magadha.

that is, between 520 and 577 A. D. (see *Anec. Oxon.*, p. 63 ff.). It exhibits throughout the exclusive use of the cursive form of *ya*, thus showing that this cursive form was fully established for MS. writing in the middle of the sixth century A. D. The next oldest MSS. are two, described as Nos. 1049 and 1702 by Mr. Bendall in his *Catalogue of Buddhist MSS. in the Cambridge Library*, p. XXXIX. One of them is dated Samvat 252, which Mr. Bendall takes to be in terms of the Harsha era and to be equal to 857 A. D. For my part, I can see no valid objection, on palæographic grounds, to understanding the date in terms of the Gupta era, and as equal to 571 A. D. I do not notice any such material difference between the writing of the Horiuzi MS. and the two Cambridge MSS., as to account for a supposed interval of three centuries. Any how, both Cambridge MSS. exhibit the exclusive use of the cursive form of *ya*.

The conclusion appears to me inevitable, that any MS. which shows, as the Bower MS. does, the exclusive use of the old form, or which shows an uniform absence of the use of the cursive form, cannot possibly be placed later than 550 A. D., and in all probability is very much older. The only question is, whether there are any indications in the Bower MS. that render it possible to fix its date somewhat more definitely.

Here the following facts are to be observed. The first appearance of the modern cursive form of *ya* in any inscription is met with in the Bijagaḍh inscription of Viṣṇu Vardhana, of 371 A. D. (Fleet, p. 252), in *śreyo*, line 4 (if the plate can be trusted); and it is to be noted that it is used in junction with the vowel *o*. The old form, however, is more usual, as in *nāmadheyena*, l. 3, and *abhivṛiddhaye*, l. 4, in both cases with the vowel *e*. The first appearance of the transitional cursive form is met with about a century later (see below), but there can be no doubt that, though in the existing inscriptions, the first appearance of the modern form happens to be earlier, that form, as compared with the transitional form of the letter, is of later development.\* Probably there was no great interval between the development of the two forms. In any case, the invention (so to speak) of the transitional form and, with it, the first beginnings of the modern form of *ya*, may, thus far, be placed at about 350 A. D.

The actual first appearance of the transitional form occurs in the Indor copperplate inscription of Skanda Gupta, of 465 A. D. (Fleet, p. 68), in the words *abhivṛiddhaye*, l. 4, and *upayoḥyam*, l. 7, in both cases with the vowels *e* and *o*. Side by side, the old form occurs in *yogam*, l. 9, *yo* l. 11, *abhivṛiddhaye*, l. 8. Other instances occur in the Karitalai inscription of Jayanātha, of 493 A. D. (Fleet, p. 117), in

\* A similar case, with regard to the development of the letter *m*, is noted by Mr. Fleet in his volume on the Gupta inscriptions, p. 3, footnote.

*abhivriḍḍhaye*, l. 7, and *chhreyo*, l. 15, here also with the vowels *e* and *o*; and side by side with the old form in *ye*, l. 10, *lopayet*, l. 12, *práyena*, l. 16, *yo*, l. 20. Another instance occurs in the Khoh inscription of Jayanátha, of 496 A. D. (Fleet, p. 121), in the word *abhivriḍḍhaye*, l. 8, again with the vowel *e*, and side by side with the older form in *pratyáyopanayan*, l. 11, and *práyena*, l. 17. A very clear instance is in the Tusam inscription, of about 500 A. D. (Fleet, p. 269), in *yogá-cháryya*, l. 3, again with the vowel *o*, and side by side with the old form in *upayojyam*, l. 6.\* Another clear instance occurs in the Jaunpur inscription of Íśvaravarman, of about 520 A. D. (Fleet, p. 228), in *anváyē*, l. 2, again with the vowel *e*. So again in the Mandasor inscription of Yaśodharman, of about 530 A. D. (Fleet, p. 149), in *yo*, l. 4, again with the vowel *o*, and side by side with the old form in *pádayor*, l. 5. Similarly in the Mandasor inscription of Yaśodharman as Vishṇu-wardhana, of 533 A. D. (Fleet, p. 150), in *yena*, l. 8, again with the vowel *e*, and side by side with the old form in *bhúrayo*, l. 8,† *yena*, l. 8, 13, *yo*, l. 17, 18. Likewise in the Khoh inscription of Śarvanátha, of 533 A. D. (Fleet, p. 135), in *nyáyena*, l. 13, *ye*, l. 16, and *pratyáyotpannaka*, l. 9, again with the vowels *e* and *o*, and side by side with the old form in *lopayet*, l. 18, *grámayor*, l. 7, *yo*, l. 25, *ye*, l. 27, etc. These are all the instances of the occurrence of the transitional form that I have been able to discover among the 43 (Gupta) inscriptions in the North-Western alphabet, published by Mr. Fleet.

Contemporary with them are the following instances of the use of the modern cursive form. In the Maghgawan inscription of Hastin, of 510 A. D. (Fleet, p. 106), it occurs in the words *chhreyo*, l. 14, *yo*, l. 16, *paniyeshu*, l. 17, *ye*, l. 18, again with the vowels *e* and *o*, and side by side with the old form in the words *anvayopabhogyas*, l. 10, *yo*, l. 11, *ahayo*, l. 18.‡ The transitional form also occurs in the word *abhivriḍḍhaye*, l. 7.

Now as to the conclusions that follow from the above statistics, note, in the first place, the extreme rarity of the transitional and full cursive forms, as well as the peculiar circumstances under which alone they occur. And here mark the following four points.

(1) *They occur only in a small proportion of inscriptions.* Of course, the only inscriptions with which we are here concerned are those that use more or less exclusively the old form. Those that already use

\* This instance was also noticed by Mr. Fleet (p. 270, footnote 4). It is the identical form that occurs in the Bower MS.

† This is a very good instance for comparison, because in *bhúrayo yena* the two forms stand in immediate juxtaposition.

‡ In these cases the peculiarity of the form is also noted by Mr. Fleet, p. 106.



the transitional or modern cursive forms exclusively are outside the question; so are, of course, all those that are not written in some variety or other of the North-Western alphabet. Now there are 34 inscriptions of the former description in Mr. Fleet's Volume III of the *Corpus Inscriptionum Indicarum*. To these may be added a few others, such as the Toramána inscription in the *Epigraphia Indica*, vol. I, p. 238, and the Kumára Gupta seal in the *Journal, Asiatic Society of Bengal*, vol. LVIII, p. 88. Among these there are only ten inscriptions, a little more than *one-fourth*, that exhibit the occasional use of the transitional and modern cursive forms at all. The rest use exclusively the old form.

(2) *The transitional and full cursive forms occur, in that one-fourth of inscriptions, exclusively in connection with the vowels E or O.\** With all other vowels, *i. e.*, in every other case, the old form is used.

(3) *Even in connection with the vowels E and O, the transitional and modern cursive forms are not obligatory, but optional.* In fact, even with those vowels, the old form is used more commonly than the transitional and modern cursive forms. On the whole the former is used twice as often as the latter.

(4) *Of the two cursive forms, the transitional and the modern, the former is used much more frequently than the latter (viz., transitional: modern = 13:4).*

In the second place, note that the period during which the sporadic use of the transitional and modern cursive forms occurs, is a comparatively well defined and short one. Its termini, so far as the evidence of the available inscriptions goes, are from 371 A. D. to 533 A. D., or in round numbers from 370 to 540 A. D., *i. e.*, 170 years. Or, if we omit the very early case of the Bijagaḍh inscription, of 371 A. D., as perhaps of a suspicious character, because it stands by itself, separated by an interval of about 100 years from all others, *the transition period extends from about 470 to 540 A. D., that is, 70 years.* Antecedently to this period, we find the old form of *ya* in undisputed possession of the field, and subsequent to it, the cursive form of *ya* is in equally undisputed possession.

Now it appears to me, that from these facts there is but one conclusion, to which one is irresistibly driven. It is this, that there is here disclosed to us evidence of the actual point in time, when the invention, so to speak, of the cursive form of *ya* was made, or, to speak more precisely, the application of it to the non-conjunct *ya*. For to suit the case of the conjunct or under-written *ya*, the cursive form had been long before

\* Probably it would also be used with the vowels *ai* and *au*; though no instance happens to occur in the existing inscriptions.



invented and exclusively employed. But to the non-conjunct *ya*, it only began to be applied about 470 A. D. At first it was only applied tentatively and hesitatingly in those cases in which the non-conjunct *ya* carried the vowels *e* or *o* (or *ai* or *au*). But the convenience of the cursive form soon carried everything before it, and displaced the old form entirely about 540 A. D. In all probably *this process commenced, in the case of manuscript writing, earlier than in that of documentary inscription, perhaps already about 400 A. D., and terminated proportionately earlier, perhaps about 500 A. D.* On the other hand, in documentary inscription the process began later and ended later. Here the use of the old form may have lingered on to about 600 A. D.; but from that date, as already shown from the evidence of existing dated inscriptions, the use of the cursive form of *ya* enjoyed an undisputed possession of the field.

Accordingly for practical purposes, the rule may be laid down, that *any inscription in the North-Western Indian alphabet which shows the more or less exclusive use of the old form of YA must date from before 600 A. D., while any inscription showing an exclusive use of the cursive form of YA must date from after 600 A. D.*

With regard to manuscripts the same rule must hold good, with this modification, that the termini must be put back by about 50 (or it may be 100) years; that is, *a MS. showing the exclusive use of the cursive form of YA must date from after 550 or perhaps 500 A. D., while a MS. showing the more or less exclusive use of the old form of YA must date from before 550 or 500 A. D., and a MS. showing the exclusive use of the old form of YA must date from before 450 A. D.*

That this rule, as deduced from the above collected facts, is correct is proved by the Horiuzi MS. This MS. uses the cursive form of *ya* exclusively, and, as shown by Professor Bühler, it certainly dates from some time between 520 and 577 A. D.

This rule further proves that the elaboration of the so-called Śāradā alphabet may be placed about 500 A. D. For it possesses the cursive form of *ya*. Hence it follows that *any manuscript and a fortiori any inscription, written in the Śāradā characters must certainly be later than 500 A. D.;* though as the Śāradā characters, with slight modifications, are used up to the present day in Kāśhmīr and the adjacent regions, a mere consideration of the form of the cursive *ya* is insufficient to fix with any approximation the date of such a manuscript or inscription in any particular year after that epoch.

Now let us see the bearing of the results of the above enquiry on the question of the age of the Bower MS.

(1) It is to be noticed that *the old form of YA is used almost ex-*

clusively throughout the MS. Indeed, in the second, third and fourth portions it is used exclusively, and it is only in the first and fifth portions, that the transitional form occasionally occurs.

(2) *This transitional form is never used, except when carrying the vowels E or AI or O or AU.*

(3) *Even with those vowels, the use of the transitional form is optional; though on the whole, it is more usual than that of the old form.*

(4) *Of the two forms of the cursive YA, the transitional and the modern, the former is used almost exclusively; the modern cursive form occurring only in a few isolated cases.*

The following examples are all taken from the two published plates; and I have only to remark, that the pages, figured on the two plates, are very fair specimens of the whole manuscript.

The transitional cursive form is to be seen on Plate I, No. I,\* in *yoga*, l. 1, *yoga*, l. 2 twice, *yogánām*, l. 3, *trayodaśam*, l. 5, *kalpayet*, l. 9; again on Plate III, upper page, in *jīvanīyo*, l. 2, *payo*, l. 4, *jīvanīyaischa*, l. 4, *lepayet*, l. 4, *vimīśrayet*, l. 6, *prayojayet*, l. 6, *avagāhayet*, l. 6, *yo...*, l. 6, *lehayet*, l. 8, *prayojayet*, l. 11. Note that it is always used with the vowels *e* or *ai* or *o*.

There is only one instance of the modern cursive form; it occurs in the akshara *yet* of *prayojayet* in Plate III, upper page, in line 11. Here we have the transitional and the modern cursive forms side by side in one word, the former form being used in the akshara *yo*, the latter in the akshara *yet*. A similar instructive example of the use, side by side, of the old and the transitional forms, we have *ibidem* in *prayojayet*, in line 6, where the old form is seen in the akshara *yet*, while the transitional form occurs in the akshara *yo*.

Of the old form there are the following instances. On Plate I, No. I, we have it in *chūrṇṇayet*, l. 10, and on Plate III, upper page, in *upakalpayet*, l. 2, \* \* *yet*, l. 3, *prayojayet*, l. 6, *lehayet*, l. 8, *páyayet*, l. 9. Note here again, that all these instances are with the vowel *e*. Of the old form with the vowel *o* there is no instance in the figured pages; but I have noticed a few cases in other parts of the manuscript. Of course, I exclude here, as being beside the precise point in question, all instances of the use of the old form in combination with any other vowel, only remarking, that it is used uniformly with all other vowels.

To sum up, the examination of the two specimen pages shows: *ad* Nos. 1 and 2, that the old form is used exclusively, except with the vowels *e*, *ai*, *o* and *au*†; *ad* No. 3, that out of 23 instances, in which the

\* Plate I is in the April *Proceedings* 1891, and Plate III in the November *Proceedings*, 1890.

† Of *au* there is no instance in the figured pages, but I have met with a few in other pages of the manuscript.

letter *y* is combined with the vowels *e* or *ai* or *o*, the cursive (transitional and modern) form is used in 17, while the old form is used in 6; that is, the former is used about three times as often as the latter; *ad* No. 4, that out of 17 instances of the use of the transitional and modern cursive forms, the former is used 16 times, while the latter occurs only once; *i. e.*, that the transitional form is used almost exclusively.

Now comparing the case of the Bower MS. with that of the Gupta inscriptions, the result is this, that the two cases, while fully agreeing in the main points, differ only in one particular, namely, that the cursive (transitional or modern) form is used in the manuscript rather more frequently than the old form (*viz.*, cursive: old = 3: 1), while in the inscriptions the old form is used rather more frequently than the cursive form (*viz.*, cursive: old = 1: 2). This, however, is nothing more than may be expected, if we consider that on the one side we have a case of ordinary manuscript writing, on the other one of documentary inscription, and remember that (as Professor Bühler says, in *Epigraphia Indica*, p. 68) "everywhere in India the epigraphic alphabets are in many details retrograde and lag behind the literary ones."

One thing, however, is clearly brought out by the evidence above set out, that the writing of the Bower MS. must be placed within that period, which, as we have seen, is marked out by that evidence as the period of transition from the use of the old rigid form of *ya* to the use of the (still existing) cursive form; that is, for manuscript writing, *within the period from about 400 to 500 A. D., or the fifth century.*

It is true that in the second, third and fourth portions of the Bower MS., the old form is used exclusively. There is no trace whatsoever of either the transitional or the modern cursive forms. Judging by this circumstance only, we should have to place the MS. still earlier, somewhere before the fifth century A. D. But this would certainly seem to be wrong with regard to the second portion. For the fact, that this portion was written after the first, seems to be clearly proved by the circumstance that it commences on the reverse of a leaf, on the obverse of which we have the ending of the first portion. Properly considered, however, that circumstance only tends to confirm the conclusion that the main portion (ABE) of the Bower MS. was written during the transitional period. For it is only natural to suppose that during that period, some scribes had already more or less adopted the new fashion of cursive writing, while others, more conservative, adhered to the older fashion. On the whole, therefore, considering that the portions A and E of the MS. appear to manifest a decided tendency to a free use of the transitional form, it will probably be safer to place the date of the main portion of the MS. nearer to the end than the beginning of the transi-



tion period, that is to say, in the second half of the fifth century (say, about 475 A. D.). The portions C and D, however, may be referred to the commencement of that period (say 425 A. D. or even earlier).

This result will probably be startling to most of my readers. There exists,—and I admit, hitherto not without reason—a pretty general tendency to discredit any claim to great age on the part of any Indian manuscript. I used to incline to the same opinion, and the present result was an unexpected one to myself. But I do not see, how the force of the evidence can be gainsaid.

Let us see what the objections are. In the first place it is said, that the material of the MS.—birch bark—is of a nature too weak and flimsy, to permit us to believe that it could endure for such a length of time. This argument has been already well answered by Mr. Bendall in his *Catalogue of Buddhist Sanskrit MSS.*, p. XVII ff., and by Professor Bühler in the *Anecdota Oxoniensia*, vol. I, part III, p. 63 ff. No *a-priori* rule will apply; all depends on the circumstances under which a MS. may have been preserved; and the argument, from the nature of the material, will not stand for one moment against positive arguments from epigraphic history. According to Lieut. Bower's account, the MS. "had been dug out of the foot of one of the curious old erections just outside a subterranean city near Kuchar." These erections are described as being generally about 50 or 60 feet high, in shape like a huge cottage loaf; built solid of sun-dried bricks with layers of beams now crumbling away." I suppose it cannot be doubted that these erections are Buddhist stūpas. Such stūpas often contain a chamber enclosing relics and other objects; these chambers are generally near the level of the ground or "at the foot" (as it is said) of the erection, and they are often dug into by persons who search for hidden treasures. In this way the MS. was probably dug out, perhaps not long before it was made over to Lieut. Bower. In such a, practically air-tight, chamber there is no reason why a birch bark MS. should not endure for any length of time.

Another objection is that the characters used in a MS. are no guide to its age. It is said that "characters of the Gupta type have been used in very late times, and indeed are in use to the present day all along the region from which the Bower MS. comes." The characters which are here meant, are those used in the Káshmír, Chambá and Kángará valleys. They are those which are commonly known by the name "Śáradá characters. These, as already remarked, are a variety of the North-Western alphabet, and are that variety which has, more than any other, preserved the shapes of its ancient parent, the North-Western Gupta alphabet. Now it is not quite correct to say, that



the S'áradá alphabet has not changed; it is quite possible to distinguish the modern form of the S'áradá from its more ancient form. But what is really important is this, that *the S'áradá alphabet, so far as we have any dated evidence, never possessed, at any period of its existence, the old (Gupta) form of the consonant YA. It always possessed exclusively the modern cursive form of that letter.* I maintain, that there exists not a single dated MS. or inscription, written in any variety of the S'áradá alphabet, which does not show the exclusive use of the cursive form. This being so, it follows that any conclusions, drawn from facts connected with the S'áradá alphabet, have no application to a MS., which shows the almost exclusive use of the old (Gupta) form of *ya*, and which, therefore, is *not written* in the S'áradá characters. Now, what conclusions can be drawn from the facts connected with the S'áradá alphabet? Its exclusive use of the cursive *ya* shows that its elaboration is to be dated on this side of 500 A. D. But as it has but little changed the shape of its letters since the date of its inception, it follows, that any undated MS. or inscription written in the S'áradá alphabet *must* be placed after 500 A. D., but *may* be placed almost at any time *after that epoch*. That is really all that can be intended by the principle that the S'áradá characters are no guide as to age. More the principle will not bear, and it clearly is not applicable to a MS. which is not written in the S'áradá characters, but in a form of alphabet more archaic and very possibly the parent of the S'áradá. With the proviso, now explained, I fully agree with Professor Kielhorn's remark, made with reference to a Chambá Grant (in the *Indian Antiquary*, vol. XVII, p. 7) that "it would be impossible to determine the age, even approximately, from its characters," these characters being, as Professor Kielhorn explains, the well-known S'áradá. Judging from these characters, all that one could say would be that the grant may date from any time after 500 A. D., which, of course, would be a futile proposition.

The main argument for the age of the Bower MS. is the preservation in it of the old form of *ya*. No objection can be raised on the ground that the old form was preserved much longer in the South-Indian and the North-Eastern Indian (Nepalese) alphabets. As these alphabets differ from the North-Western Indian, which is used in our MS., any conclusions, drawn from the circumstances of those alphabets, have no applicability to our MS. It stands to reason that no scribe, used to his own North-Western Indian alphabet, would, in writing a MS., think of introducing the old form of a letter, which did not exist any more in his own alphabet, from another alphabet, unfamiliar to him, in which it did still exist.

P. S.—Since writing most of the above remarks I have, as already stated, read and transcribed nearly the whole of the manuscript. I have carefully noted every occurrence of the aksharas *ye*, *yo*, *yai*, and *yan*.

In the portions BCD I have found the cursive form (either transitional or modern) used *not once*. The aksharas *yai* and *yan* never occur ; the akshara *ye* occurs 19 times (B 4, C 13, D 2), always with the old form of *ya*. The akshara *yo* occurs 9 times (B 7, D 2), again always with the old form.


In the portions A and E, the case stands thus : there are altogether 333 cases of the occurrence of those aksharas, *viz.*, 202 of *ye*, 125 of *yo*, 4 of *yai* and 2 of *yan*. In every case of *yai* and *yan* the transitional form *𑀓* is used. With *ye* and *yo* the transitional form is used 227 times, and the modern form *𑀔*, 16 times. The transitional form occurs 117 times with *ye*, 110 times with *yo*, 4 times with *yai*, and twice with *yan*. The modern form occurs 12 times with *ye*, and 4 times with *yo*. Altogether the cursive form occurs 249 times. The old form occurs 73 times with *ye* and 11 times with *yo*. The following table exhibits this :

| Aksharas :   |     |               |               |              |              | Totals. |
|--------------|-----|---------------|---------------|--------------|--------------|---------|
| Old ...      | ... | <i>ye</i> 73  | <i>yo</i> 11  | <i>yai</i> 0 | <i>yan</i> 0 | 84      |
| Transitional | ... | „ 117         | „ 10          | „ 4          | „ 2          | 233     |
| Modern       | ... | „ 12          | „ 4           | „ 0          | „ 0          | 16      |
| Totals       |     | <i>ye</i> 202 | <i>yo</i> 125 | <i>yai</i> 4 | <i>yan</i> 2 | 333     |

Now with regard to point No. 3 (see p. 89), there being 233 cursive forms to 84 old ones among a total of 333 cases, the proportion of cursive to old forms is as 3 to 1. With regard to the point No. 4, there being 233 transitional to 16 modern forms among a total of 249 cases, the proportion of transitional to modern forms is as (about) 15 to 1. In both cases, it will be seen, the evidence of the entire manuscript most accurately bears out the evidence of the specimen pages (see p. 91) and thus confirms my conclusions based on the latter. I may add with regard to the points Nos. 1 and 2, that in the portions A and E, the cursive (transitional or modern) form never occurs in any other akshara but those four : *ye*, *yo*, *yai*, *yan*. With the aksharas *ya*, *yá*, *yi*, *yí*, *yu*, *yú*, in every case, without any exception, the old form *𑀓* is used. The occurrence of these six aksharas, especially of *ya* and *yá* is very frequent, and this fact all the more accentuates the striking circumstance that the cursive form is only employed with the vowels *e*, *o*, *ai*, and *au*. There must have been some reason for this peculiarity,—perhaps one of mere

convenience of writing, though I cannot suggest any satisfactory one. I should note, that the vowels *e*, *o*, *ai*, and *au* are drawn, both with the old and the cursive forms, in every possible variety: entirely side-marked, half side and half top-marked, and entirely top-marked. The cause of the peculiarity, therefore, cannot well have had any connection with the form of the vowels.

I would suggest that similar statistical enquiries should be made with reference to some other leading letters; e. g., *m*, *sh*, the sub-scribed *y*, the super-scribed *r*; also with regard to the numeral symbols. I have little doubt but that from such statistics may result some further useful land-marks for the determination of dates of writing. I hope to pursue the enquiry myself, so far as leisure from official duties will permit me.







CLAYSTONE POT.  
( $\frac{1}{2}$  Size.)



1 & 2, CORAL: 3, EME-  
-RALD: 4, RELIC: 5, SAP-  
-PHIRE: 6, RUBY: 7, AQUA-  
-MARINE  
BEAD:

(All Full Size)



COPPER POT.  
( $\frac{1}{2}$  Size.)



SILVER POT.  
( $\frac{1}{4}$  Size.)



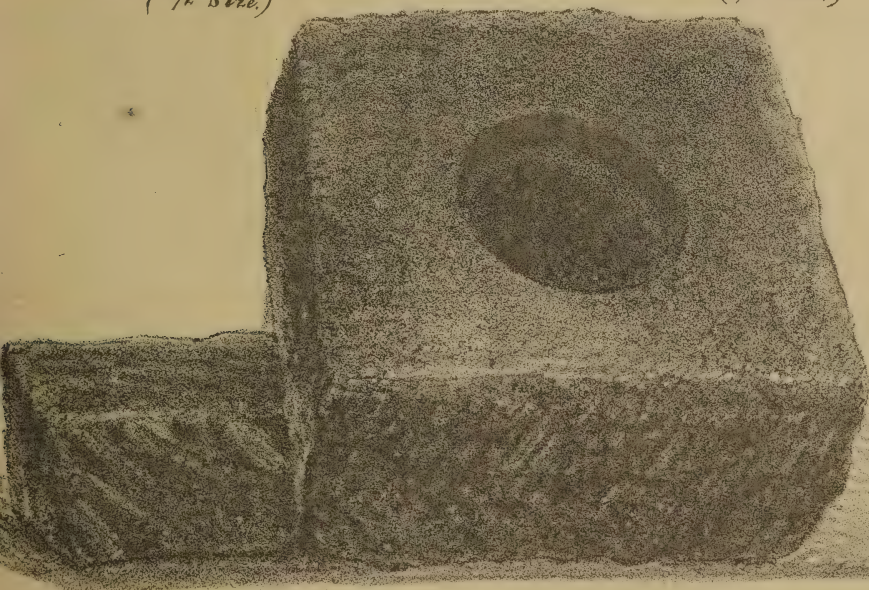
GOLD POT.  
( $\frac{1}{2}$  Size.)



CHIPS OF BROKEN POT.  
( $\frac{1}{2}$  Size.)



LID OF THE STONE COFFER.  
( $\frac{1}{2}$  Size.)



STONE COFFER & UPPER BLOCK SEEN BEHIND. ( $\frac{1}{4}$  Size.)





# JOURNAL

OF THE

## ASIATIC SOCIETY OF BENGAL.



Part I.—HISTORY LITERATURE, &c.

No. III.—1891.

*Three Documents relating to the History of Ladakh : Tibetan Text, Translation and Notes.—By the late DR. KARL MARX, Moravian Missionary at Leh, Ladakh.\**

### INTRODUCTION.

The late lamented Emil von Schlagintweit, Ph. D., etc., in 1866 in the 'Abhandlungen der k. bayer. Akademie der Wissenschaften, I. Cl., X. Bd., III. Abth.,' under the title of 'Die Könige von Tibet,' published for the first time the text and translation, with notes and commentaries, etc. of the so-called 'Ladakh-Gralrabs.' This little book contained, after an introductory chapter, firstly, the genealogy of the Sákya; secondly, a brief history of the kings of Tibet (Yar-lung), and thirdly, a history of the kings of Ladakh. Now for the present it is not my intention to examine at all the first and second of these three divisions, but my remarks refer solely to the third and last, viz., the history of the kings of Ladakh, commencing at page 23a of the Tibetan text, and at pp. 62, 854 of the translation.

The Tibetan text was obtained for his brother Emil by Hermann von Schlagintweit-Sakünlünski, when on a visit to Leh, in 1856. It was a copy specially prepared for him, executed by three Lamas, but not until valuable presents had been given to the Rájá. It apparently

\* [The author of this paper died, before he could revise the proofs. It is now printed, as received from him. The press-corrections of the Tibetan portion have been kindly made by Bábu S. Ch. Dás, C. I. E. Ed.]

was written in U-chan characters; consequently in all those cases, when certain U-med letters are apt to be confounded, it may be taken for granted that, as compared with U-med MSS., preference must be given to Schlagintweit's edition, as being founded on an U-chan MS. On the other hand, any MS., specially prepared by a native of Ladakh for a foreigner, is apt to be less reliable than others of independent origin, for the reason,—which would especially be true regarding historical documents—that the copyist will have a tendency to slightly alter the text, in the interest of his master, religion or country, suppressing such facts as may seem derogatory to their fame, and substituting for phrases liable to be misunderstood others of a less equivocal character. As to Schlagintweit's edition it must be admitted, that the Lamas, who wrote the copy for his brother, did not give way to any such tendency until they reached the 6th line of folio 30a: be it that they wished to suppress certain facts contained in the sequel, or that they were of opinion, that the 'merit' of the presents extended no further: certain it is, that beyond this point, the text is merely a meaningless jumble of words, culled at random from the original and put together in such a way, that only a careful examination of the text by one who knew the language could reveal the fraud. These two and a half pages, therefore, which are supposed to embrace the history of about two centuries, are really not fit for translation, and the attempt can only conduce to results totally misleading. All the other parts of the MS. seems to have been done fairly well. There are mistakes in spelling, and here and there an omission or an addition of a word or phrase that did not belong to the original, but, on the whole, the MS. seems to have been better than many one sees here. The pages of this Journal, however, are, I fear, not the fit place to enumerate and discuss in detail all the various errors in writing that occur in the MS. The new Tibetan text, herewith published, will, to any one interested, clearly show where and how, in my opinion, Schlagintweit's text ought to be corrected; and to explain the reason why I dissent from his opinion, would, in a MS. of comparatively so little classical value as the 'Ladakh Gyalrabs', be sheer waste of time.

Schlagintweit's translation I would much prefer to pass over in silence, but as, for a new translation, there would be no *raison d'être* whatever, if his translation were at all adequate, I am compelled to state my opinion regarding it. It is as follows:

Considering that, in the first place, his Tibetan text left much to be desired;—that, secondly, in 1866 the Standard-Repository of the language of western Tibet, *viz.*, the Dictionary of Aug. Heinrich Jäschke, had not yet been published, and that therefore the meaning of many

words and idiomatic expressions with which we now are familiar were still undetermined;—that, thirdly, Schlagintweit was not in a position, by constant intercourse with natives of Ladakh, to test for himself the accuracy of the conclusions he arrived at;—that, fourthly, he, being at a distance, could not possibly have that knowledge of the country and people, which a sojourn in the country itself only confers;—and, finally, that to him even no map of western Tibet, and of Ladakh probably none more full than Montgomerie's route map of 1864, was available:—considering all these drawbacks, his translation, no doubt, was all that at that time could be accomplished. The amount of acumen and learning he expended upon it was so great, that the result certainly ought to have been of the first order.

Still, in the light of the present day, and with materials at hand that, no doubt, would have excited Schlagintweit's envy, it must be said that his translation can no longer be left unchallenged. Not only does he himself admit that there remain a considerable number of obscure passages, which he was unable to solve and which admit of a solution now;—but also, where he is confident to have divined the right meaning, his translation either remains so mysterious, as to be little more intelligible than the original Tibetan, or it is, from some misunderstanding or other, erroneous. Throughout the whole 'History of the Kings of Ladakh' there are, indeed, very few sentences, that at all give a correct idea of the meaning intended; most of it is either in part or totally wrong. I may say, that had his translation lent itself to being corrected and translated into English, I probably would have used it. But this was not the case. I had to discard it entirely and build entirely afresh on new ground.

In proof of this assertion I probably again ought to discuss in full, where and in what respects my translation differs from his, and show cause why I consider mine an improvement upon his. This, however, could again only be done, if I had an unlimited space at my disposal. Hence, as to the 'where' and 'how' we differ, I must again refer any one interested to the pages of the two translations themselves. He will, probably, find it difficult to reconcile the two, and possibly not understand that the original text, after all, should be almost identical. And also, as to the 'why' and 'wherefore,' I find myself under a necessity to abstain from any discussion, because if once gone into, it would be necessary to rewrite almost the whole of his and my own translation, and to analyze nearly every sentence. All I can do, therefore, is to submit my translation, without any special defence, to the judgment of Tibetan scholars and abide their verdict. I trust, however, that they will find it not so very difficult to discover, why I had definitely to set aside Schlagintweit's translation and attempted a new one.



And even those, who do not know Tibetan and hence are not in a position to determine every point of difference for themselves, will readily discover that, after all, the subject has gained a little in lucidity, and that the history of Ladakh, as far as it is contained within these pages, is no longer a chain of insoluble mysteries, but a coherent and intelligent, though simple and brief account of the past. This criterion is available to any one and is, probably, the best in any case.

The fresh material at my disposal consists of three different manuscripts. All of them are written in the U-med character.

A-MS. is a small book in 16mo., bound in leather and well kept. It contains, on 109 leaves, 1st, a cosmogony and cosmology in outline; 2nd, the genealogy of the Sákya; 3rd, a history of the kings of Tibet (Yar-lung); 4th, a history of the kings of Ladakh down to king Senge-nam-gyal (XXII). Throughout, it is most neatly written with comparatively few mistakes. As it was not originally written for an outsider, but for the private use of its owner, its text may safely be supposed not to have been altered on purpose. The history of the kings of Ladakh down to Senge-nam-gyal fills 20 leaves. It forms the basis of the Tibetan text, now published.

B-MS. are four loose leaves in folio, very old looking, very much worn at the edges and corners, and torn in some places. It commences with the history of the second (Nam-gyal) dynasty of Ladakh kings (compare translation, p. 123), and gives a comparatively full account of the history of Ladakh down to the Dogra invasion. This MS. is very badly written, so much so, that even Ladakhis find it difficult to read; still in point of excellence it ranks next to A, and the information it contains regarding the decline of the Ladakh empire (since De-ldan-nam-gyal, XXIII) is especially valuable. In order to avoid trespassing too much upon valuable space, I amalgamated the preceding and overlapping portions of B with the corresponding portion of A; that is to say, the portion of B containing the history of the Ladakh kings from Dags-pa-bum to Senge-nam-gyal inclusive, which coincides almost exactly with the corresponding portion of A, I do not purpose publishing separately, but it is embodied in A-MS., though any new matter contained in it is conscientiously preserved and specially marked there. My next publication will, therefore, have to commence with the successor of Senge-nam-gyal, that is, De-ldan-nam-gyal. It will have for its basis the rest of B-MS. with such additions as may be derived from C-MS.

C-MS. consists of two parts. The first part was specially prepared by command of the Wazir of Ladakh. Consequently all the vices, inherent in such MSS. as hinted at above, are manifest in it. It consists of 23 folio leaves. It is very carelessly written, and the text is very

incomplete. It is much inferior to either A or B. It is obvious in several places that alterations were introduced on purpose, and the principle underlying this practice can easily be discovered: it is, to avoid, in the first place, the miraculous, secondly, anything that may be offensive to the Dogra reader, and thirdly, all that may throw an unfavourable light on the Royal family. Still, there are a few passages preserved in it that are new; and they will be found introduced in their proper places and specially marked in A and B. This MS. covers the entire history of the kings of Tibet (Yar-lung) and of Ladakh to close upon the Dogra invasion. It also contains an interlinear translation into Urdú, but written in Tibetan (U-med) characters.

The second part of C-MS., was prepared for me at my special request by the writer of the first part, who is the head of one of the ancient families that presided over important functions under the old régime. As I am not an official personage, I think, I need not apprehend that he withheld the truth from me. In this portion he almost exclusively relates the events of the Dogra wars and the fall of the Ladakh empire. As his own father was mixed up to some extent with these painful affairs, it is to him a kind of family history as well. The very fact that he tells it at all and without any embellishing touches, goes far to prove his veracity in this case; and as the whole narrative does not contain one word derogatory to the conquerors, but a long tale of ignominy and shame to the losing, *i. e.*, his own, side, I think the character of the writer is fully established thereby. I, therefore, purpose giving this part of the MS. separately under the title of C-MS. It consists of about 6 folio leaves. Its language is the modern Ladakh book-language, and this fact alone should render it particularly interesting to students of the Tibetan language.

It will appear from these remarks, that all the three manuscripts were arranged by me so as to form one consecutive whole, containing as full an account of the history of Ladakh, as, for the present, it is possible to give.

As none of these documents, however, from a literary point of view, is really of classical value, I did not hesitate to introduce such corrections in the spelling of words, as were necessary to render them as readable as possible. The spelling uniformly adopted is that of Jäschke's Dictionary. Only in C-MS. I shall preserve the original orthography, wherever it is accounted for by Ladakh usage.

As to my own translation it is superfluous to say, that I attempted to give as true and faithful a rendering of the original in English as I could; and I hope and trust, that mistakes are few and far between. On the other hand, I may say, that it has been my aim throughout to

present it in such a form as will make it acceptable to English readers. If, after all, the wording seems clumsy and of little fluency,—I can only say that I ‘tried my best.’ As the English language is a foreign idiom to me, I think, that in this respect I am entitled to a certain amount of forbearance. Somehow, it seems to me, that to combine, in a translation, faithfulness to a Tibetan original with fluency in English is particularly difficult.

Apart from my own observations and special studies, I had to rely greatly upon the assistance of natives of Ladakh. Information derived from this source has, however, in every case been carefully sifted and compared with statements by other persons. As to works by European authors, Jäschke’s Dictionary was found invaluable. Koeppen’s ‘*Religion des Buddha*’ and ‘*Lamaistische Hierarchie*’ was a great help in many places. Sir Monier Williams’ ‘*Buddhism*’ (1890) sometimes proved useful. E. von Schlagintweit’s ‘*Buddhism in Tibet*’ (1863) is, I fear, not more reliable than his ‘*Könige von Tibet*’ (1866). Cunningham’s ‘*Ladakh*,’ I regret to say, was not accessible here, nor was Wassiljew’s ‘*Buddhismus*.’ Drew’s ‘*Northern Barrier of India*’ and his map are referred to on several occasions. Other maps used were the map of the Government Survey for Ladakh etc., and one sheet (SE) of the ‘*Map of Turkestan*’ (in four sheets, 1882). No maps relating to Central Tibet were available here.

In romanizing Tibetan names, I adopted, for the sake of its simplicity, Jäschke’s system as set forth in his useful ‘*Tibetan and English Dictionary*’ (Kyelang, 1866), with one or two exceptions, *viz.*, *h* as indicating an aspirate, I replaced by an apostrophe, (*e. g.*, for *chh*, *ths*, etc., I wrote *ch’*, *t’s*, etc.); instead of *shr*, I used *sh*, and *g* indicates the soft guttural *g* (in the Comparative Large Dictionary *γ*), *q*, *t*, *t*, *sh* represent the cerebral class of consonants. The vowels invariably have the Italian sound. This system of transliteration very nearly corresponds with the ordinary Ladakh pronunciation of Tibetan. It widely differs, as is well known, from the Lhasa pronunciation, but has the advantage of representing more accurately the spelling of Tibetan words, and of simplicity.

As I am not acquainted with Sanskrit, I had to rely upon the authorities adduced for any information derived from Sanskrit sources.

A small contingent of new Tibetan words and phrases will also be formed embodied and explained in these pages.

The notes appended at the end of the translation will, I trust, be found useful.



## A.

## Tibetan Text.

༡༡། (ཐེ་དཔལ་འཁོར་བཅན་) དེའི་སྤྲུལ་སྦྱིད་ཐེ་ཉི་མ་མགོན་དང་། བློ་བཟང་གིས་ཅིགས་དཔལ་དང་གཉིས། སྦྱིད་ཐེ་ཉི་མ་མགོན་ནི་བོད་ཁོང་ལོག་གི་  
 འབལ་མ་རྒྱལ་བཅན། ཁྲུང་མོ་ཉལ་པ། ལྷ་ཀ་བཟླ་བ་སྤྲུལ་གྱིས་གཙོ་བྱས་པའི་ཏ་  
 པ་བརྟུ། སྟོང་མངའ་རིས་སྤྲུལ་བྱོན་པའི་ལམ་ཁར། ཉ་དང་སྒྲོང་གསེལ་དགོས་  
 གུང་ནས། དེར་རས་གྱིས་སྤྲུང་ནས་དྲངས་པས་ད་ལྟ་གྲང་རས་བོད་ཀྱི་གྱུལ་པོའི་  
 ལྷགས་སྤྲུལ་མོང་བ་ཡིན་ནོ། དེ་ནས་ར་ལའི་གྱུད་དུ་ཕེབས། ཉིའི་ལོ་ལ་མཁར་དམར་  
 ཅིགས། ལྷག་གི་ལོ་ལ་ཅེ་ཤོ་གྱི་རི་ཅིགས་ནས། དམ་ལག་གི་གཞུང་ནི་མས་ལ་ཡུལ་  
 དང་གོང་བྱིར་མང་པོ་བདེ་བ་བོངས། མར་ཡུལ་ལ་གཞོན་པ་མ་མཛོད། དེའི་དུས་  
 སྤྲུལ་མར་ཡུལ་ལ་དྲགས་སྟོང་གི་སར་གྱི་བརྟུང་པས་འཛོན། སྒྲོང་ནི་མས་རང་དགའི་  
 སེལ་བྱར་ཡོད་པ་ཡིན་ནོ། དེའི་ཆོ་དགོ་བ་ཤེས་བཅན་གྱིས་སྤྲུངས་སྤྲུལ་ཞུས་ཏེ།  
 འབྲོ་ཟ་འཁོར་སྒྲོང་བཅུན་མོར་སྤུལ་བ་ཁབ་དུ་བཞེས་པ་ལ། སྤྲུལ་གསུམ་བྱུང་ཞིང་།  
 སྤྲུལ་ཁབ་ཉི་རྒྱུད་ཅིགས་ཏེ། གྱུལ་ས་བདེ་བ་ནས། མངའ་རིས་སྒྲོང་གསུམ་ཆབ་  
 འོག་དུ་བསྐྱུས་ནས། གྱུལ་སྤྱིད་ཆོས་བཞེན་དུ་བསྐྱུངས་སོ། སྤྲུལ་གསུམ་ནི།  
 ལྷ་ཆེན་དཔལ་གྱི་མགོན། བར་པ་བཟང་གིས་མགོན། རྒྱུང་བ་ཐེ་གཙུག་མགོན་དང་  
 གསུམ་མོ། དེ་ནས་སྤྲུལ་གསུམ་ལ་མངའ་རིས་སོ་སོར་གནང་སྟེ། ཆེ་བ་དཔལ་གྱི་  
 མགོན་ལ། མངའ་རིས་མར་ཡུལ། འབངས་གཞུ་ནག་ཅན། ཤར་རྩ་ཐོགས་  
 དང་། གསེར་ཁ་འགོག་ལད་ཀྱི་ཐེ་མཆོག་དཀར་པོ། མཆོམས་ཀྱི་ར་བ་དམར་པོ།  
 ལྷ་མ་ལེ་ཡི་སྤྲུལ་གྱི་པོ་བོང་ལ་མགོ་བར། རྒྱལ་ཁ་ཆེད་ལ་ཙ། རྩོ་བྱག་པ་ཅན་ལན་



ཆད། གྲང་གསེར་ཁ་འགོག་པོ་ཚུན་ཆད་གྱི་ས་གྲོལ་གཏོགས་པ་ནི་མས་ཡིན་ནོ།  
 བར་པ་བཀྲ་ཤིས་མགོན་ལ། ལུ་གེ་ཕུ་བྱངས། ཅི་དང་བཅས་པ་ལ་མངའ་མཛད།  
 རྒྱང་བ་མེ་གཙུག་མགོན་ལ། ཟངས་དཀར་སྒོ་གསུམ། སྤྲི་དྲི། སྤྲི་ཕྱོགས་དང་  
 བཅས་པ་ལ་མངའ་མཛད། ཆེ་བ་དཔལ་གྱི་མགོན་གྱི་སྤྲས་འགོ་མགོན་དང་། ཆོས་  
 མགོན་གཉིས། འགོ་མགོན་གྱི་སྤྲས། ལྷ་ཆེན་གྲགས་པ་མེ་༡། དེའི་སྤྲས་ལྷ་ཆེན་  
 གྲང་རྒྱབ་སེམས་དཔལ་༢། དེའི་སྤྲས་ལྷ་ཆེན་གྲོལ་པོ་༣། གྲོལ་པོ་འདྲིའི་དུས་སུ།  
 ལྷ་འབྲིལ་གྱི་དགོན་པ་བཏབ་ནས། དགོ་འདུན་གྱི་སྤྲེ་བཙུགས། གངས་རི་མཚོ་  
 གསུམ་དུ། མང་དུས་ལྷ་བཀྲ། རྒྱང་དུས་བཀྲ་ཙམ་རེ་སྒྲིབ་པ་མཛད་པ་ལ་འཚོ་  
 བའི་ཡོ་གྲང་སྒྲོ་དུབ་མེད་པར་ཡུན་རིང་དུ་མཛད་དོ། དེའི་སྤྲས་ལྷ་ཆེན་ལུང་པ་ལ་༤།  
 གྲོལ་པོ་དེའི་དུས་སུ། ལ་དུགས་སྟོད་གཤམ་གཉིས་གྱི་དམག་བསྐྱོངས་ནས། རྒྱང་  
 ཏིལ་བཀྲབ། རྒྱང་ཏིལ་གྲོལ་པོས་ཏི་སེན་མ་ཞུ་དང་། མ་པམ་ནམ་སྐམས་བར་དུ།  
 མཛོ་དང་ལྷགས་ལ་སོགས་པའི་ཁྲལ་དང་དབྱ་འབྲལ་བའི་མནའ་བྱས་ནས། དུས་  
 ད་ལྷའི་བར་དུ་འང་ཡོད་དོ། གཞན་ཡང་སྒོ་བོ། ཕུ་བྱངས་མན་ཆོད། ལྷོ་ཕྱོགས་བྲེ་  
 སྤང་གི་ཡུལ་རྒྱལ་མེ་འབར་ཚུན་ཆོད། ལུ་བྲེ་གས་ར་གན་འགྲང་གིང་། ལྷག་ཁྲ་  
 ཚུར་ཡན་ཆོད། གྲང་ཕྱོགས་ཀ་ལུས་ཡན་ཆོད་མངའ་འོག་དུ་བསྐྱུས་དེ། ལོ་རེ་ལ་  
 ཁྲལ་སོགས་འབྲལ་ཞིང་། ཞལ་ལྷ་རྒྱ་ཡོང་བ་ཡོད་དོ། དེའི་སྤྲས་ལྷ་ཆེན་ནག་ལུག་༥  
 གྲོལ་པོ་དེས་ལྷག་གི་ལོ་ལ་ལྷན་ལར་མཁར་ཅིགས། འབྲུག་གི་ལོ་ལ་ཁ་ལ་ཅི་  
 ཅིགས་སོ། དེའི་སྤྲས་ལྷ་ཆེན་དགོ་བྲེ་༦་དང་། དགོ་འབྲུས། དེའི་སྤྲས་ལྷ་ཆེན་ཇོ་

༡ འགོ་མགོན།

༢ ལྷ་ཆེན་གྲགས་པ་མེ།

༢ ལྷ་ཆེན་གྲང་རྒྱབ་སེམས་དཔལ་༢།

༣ ལྷ་ཆེན་གྲོལ་པོ།

༤ ལྷ་ཆེན་ལྷུང་པ་ལ།

༥ ལྷ་ཆེན་ནག་ལུག།

༦ ལྷ་ཆེན་དགོ་བྲེ།

ལྷོར་༡། དེའི་སྤྲུལ་བཀྲ་ཤིས་མགོན་༢། (དེའི་སྤྲུལ་ལྷ་གྱུ་ལ་༣།) གྱུ་ལ་པོ་འདིས་  
 གྱུ་ད་དོ་ཆེ་ཅེ་མོ་དང་། ངན་སོང་སྦྱོང་བའི་གྱུ་ད། གྱུ་ད་འབུམ་ཚང་བ་གསེར་ལ་  
 བཞེངས་སོ། དེའི་སྤྲུལ་ལྷ་ཆེན་ཆོ་དཔལ་༤། གྱུ་ལ་པོ་འདིས་ཆོས་ཁྲིམས་དང་གྱུ་ལ་  
 ཁྲིམས་ཀྱི་མཛད་པ་མཐར་ཕྱིན་པར་མཛད་དོ། རེའི་སྤྲུལ་ལྷ་ཆེན་དངོས་གྱུ་བ་༥།  
 གྱུ་ལ་པོ་དེའི་དུས་སྤྱ་རབ་དུ་བྱུང་བ་དབུས་གཙང་དུ་འགྲོ་བའི་སྲིལ་བཅུགས་ནས།  
 ཡབ་མེས་ཀྱི་གཙུག་ལག་ཁང་ནི་སེམས་ཞིག་བསོས་མཛད་པ་དང་། བྱུ་ད་པར་དུ་ཆོས་  
 ཀྱི་ཆེ་འཛིག་དེན་གསུམ་གྱི་མགོན་པོའི་དུང་དུ། གསེར་དབུལ་ཟངས་ཀྱི་ཅུ་སྤྱ་དུག་  
 ལ་སོགས་པའི་བགྱི་འབུལ་དང་། བཀའ་འགྱུར་ཚར་གཉིས་དང་། གསང་སྤྱགས་  
 ཀྱི་དཀྱིལ་འཁོར་མང་དུ་བཞེངས་སོ། དེའི་སྤྲུལ་ལྷ་ཆེན་གྱུ་ལ་བྱ་རིན་ཆེན་༦། དེའི་  
 སྤྲུལ་ལྷ་ཆེན་ཤེས་རབ་༧། གྱུ་ལ་པོ་དེའི་རིང་ལ། ས་བུའི་ཉང་ཅེ་མ་ཞེས་པའི་ཁ་ལ་  
 བྱོང་བྱེར་སོངློ་སྐྱང་ཞེས་པ་ཅིགས་ནས། མར་ཡུལ་ས་བུ་སྤྱང་མཁར་དུ་བདགས་  
 སོ། དེའི་སྤྲུལ་ལྷ་ཆེན་ཁྲི་གཙུག་ཁྲོ་༨། གྱུ་ལ་པོ་དེས་སྤྱེལ་དུ་མཆོད་དེན་བགྱི་ཙ་  
 བཞེངས། ས་བུ་ཅུ་བགྱི་ཙ་གཉིས་བཞེངས་སོ། དེའི་སྤྲུལ་ལྷ་ཆེན་གྲགས་འབུམ་  
 ཁྲོ་དང་། གྲགས་པ་འབུམ་གཉིས། གྲགས་འབུམ་ཁྲེས་སྤྱེལ་ལ་སོགས་པ་ལ་  
 མངའ་མཛད་ནས། གྱི་མ་ཕུག་ཁྲེས་སྤྱ་གཙུག་ལག་ཁང་དམར་པོ་བཞེངས་ནས།  
 གྱུ་ལ་བ་བུམས་པ་མགོན་པོ་དགྲུང་ལོ་བགྱི་ད་པའི་སྦྱ་ཚད་དང་། གཡས་གཡོན་  
 གཉིས་སྤྱ་འཇམ་དབྱངས་ཕུག་ན་དོ་ཆེ་གཉིས་ཐོག་ཚད་རེ་བཞེངས། ལོགས་བྲིས་

༡ ལྷ་ཆེན་ཆོ་ལྷོར་།

༢ (ལྷ་ཅུལ་) Schl.

༣ ལྷ་ཆེན་དངོས་གྱུ་བ།

༤ ལྷ་ཆེན་ཤེས་རབ་༥ ལྷ་ཆེན་ཁྲི་གཙུག་ཁྲོ་༦ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༧ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༨ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༩ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༩

༡ བཅོམ་མགོན་།

༢ ལྷ་ཆེན་ཆོ་དཔལ་།

༣ ལྷ་ཆེན་ཅུལ་བྲ་རིན་།

༤ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༥ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༦ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༧ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༨ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༩ ལྷ་ཆེན་ཐུགས་འབུམ་ཁྲོ་༩

རྣམས་ལ་བདེ་བར་གཤེགས་པ་རྣམས་ཀྱི་འདྲ་སྤྱོད་དང་། འཇིག་རྟེན་བརྟན་བཞག་  
 དང་། རང་ཉིད་མོས་པའི་རྣམས་མཛད་བ་དང་། ལྷ་ཁང་གསུམ་ཅིགས་མཐོ་སྤྱིང་  
 གི་དཔེ་རྩ་བཞེངས། གསུང་གི་རྟེན་དུ་གཟུངས་འབྲུམ་ཆེན་མོ་དང་། དཀོན་མཆོག་  
 ཅིགས་པ་ལང་ཀར་གཤེགས་པ་ལ་སོགས་བཞེངས། ཐུགས་ཀྱི་རྟེན་ལ་དེུ་སེར་  
 བོ་སྤྲིའི་ཡུལ་ལ་གནོད་པ་ཞིག་ཡོད་པས་གདུམ་ནས། སྤྱི་མཆོད་རྟེན་གྱི་ཚུལ་ལ།  
 བང་རྣམས་བསྐྱེད་ཅོ་ཡོད་པ་བཞེངས། མཆོད་རྟེན་གྱི་མིང་དེུ་བཀྲ་ཤིས་འོད་འཕྲོ་  
 ཟེར། གཞན་ཡང་སྤྲིའི་མདོ་དེ་ན་དེུ་སྤྱང་བོ་ཆེ་འདྲ་བ་ཡོད་པ་ལ། གྱུལ་བོ་དེས་  
 རི་མ་གཤིས་དག་སྤོང་བཞི་སྤེ་གཅིག་བཅུགས་ནས། ཤི་ཡང་འགྲོད་པ་མེད་གསུང་  
 བ་ལ། སྤྱིགས་དུས་ཀྱི་ཀུན་མཁུན་ཙོང་ཁ་པ་ཆེན་པོ་སྤོང་བཟང་གཤམ་པས་རང་གི་  
 ཤངས་ཁྲག་ལ་འབྲུངས་པའི་ཆོ་དཔག་མེད་མཐེབ་ཆོགས་ཙམ་ཡོད་པ་བྱ་བལ་  
 གཉིས་ལ་བསྐྱར་ནས། ཡང་ན་གཤམ་པའི་མཚན་ཅན། ཡང་ན་ལྷའི་མཚན་ཅན་  
 ཐུག་དུ་སྤུལ་གསུང་བ་ལ། ཁྲིང་གཉིས་མར་ཡུལ་དུ་སྤྲེལ་ནས། ལུབ་ར་ན་གཤམ་  
 པ་ཞིས་བྱ་བ་ཡོད་པ་ལ། ཁྲིང་གི་བྱང་དུ་སྤྲེལ་བས། བྱ་བལ་གཉིས་ལ་སྤྲེལ་སྤྲོ་  
 ཙམ་ཀྱང་མ་གཟིགས་པར། སྤྲེལ་དུ་ཡོངས། དེའི་ཐོ་རངས་གྱུལ་བོའི་ཞལ་ནས།  
 དེ་རིང་ངའི་ཞལ་རྩ་བ་ལ། བྱ་བལ། སྤྲེལ། མོན། ཏི་ཤི་སྤུ་ཡང་མ་བཀག་གསུང་  
 བས། བྱ་བལ་གཉིས་བྱང་བར། གྱུལ་བོ་བཞེངས་ནས་བྱ་བལ་གཉིས་ལ་བསྐྱར་  
 མཛོད། བྱ་བལ་གཉིས་ཀྱིས་ཀྱང་སྤྲེལ་སྤྲེལ་སྤུལ་བས། གྱུལ་བོ་ཤིན་དུ་དགོས་ཏེ།  
 སངས་གྲུ་གྱི་བསྐྱན་པ་རིན་པོ་ཆེ་ལ་དཔེས་ནས། དཔེ་བྱུང་གི་དཀོན་པ་མ་ཅིགས་  
 ལྷན་གྱིས་བྱུང་བ་དེ་ཅིགས་ནས་དག་འདུན་གྱི་སྤེ་མང་བོ་བཅུགས་སོ། དེའི་སྤེས་  
 སྤོ་གྲོས་མཆོག་ལྷན་། གྱུལ་བོ་འདིའི་དུས་སུ། ཤུག་ནས་དཔུ་ཁྲབ་ཟེལ་པ།



མ་མའི་མུན་སྒྲིབས། ཁྲ་ཆུང་དཀར་ཅུ། ལྷ་ཁྲ་དཀར་པོས་གཙོ་བྱས་ཁྲ་བཙོ་  
 བཟྱད། ཅམ་མཁའ་ཁྲག་ལྷག་འབྲོང་ཅེ་རིངས། སྒྲོག་དམར་མེ་གསོད་ལ་སོགས་  
 པའི་རལ་གྱི་བཙོ་བཟྱད། བདུད་གྱི་ནག་པོ། དམ་གྱི་གཞུང་བཟྱད་ནྐམས་གྱིས་  
 མགོ་བྱས་པའི་སྒྲིབ་གྱི་བཙོ་ལ། ལྷ་གཡུ་འོད་ལྷན། ལྷ་གཡུ་དཀར་པོས་\*གཙོ་བྱས་  
 གཡུ་བཙོ་ལ། སྐ་མ་ཇི་བྱི་ཕྱིངས། བཏ་ཤིས་འོད་ལྷན་སོགས་སྐ་ཉི་ཤུ། ཆིབས་  
 བྲོ་བོ་ལྷ་བཅུ། ངང་པ་ལྷ་བཅུ། འོལ་བ་ཉི་ཤུ། ཁྲ་བོ་སྐམ་ཅུ། འབྲི་ཟལ་མོ་ཉི་ཤུ།  
 གཡམ་གཤམ་པ་ཉི་ཤུ། ལུག་ལ་སོགས་པའི་ཁྲ་དབྱ་འབྲུལ་བ་མང་པོ་དང་། མངའ་  
 རིས་སྒོར་གསུམ་ཆབ་འོག་དུ་བསྐྱུས་ནས་དར་ཞིང་གྱིས་པ་ཡིན་ནོ།

ལྷ་ཆེན་གཤམ་པ་འབྲུལ་གྱིས། རབ་བཏོན་ལྷ་ཅེ་དང་། གཏེ་ཡ་སོགས་ལ་  
 མངའ་མཛད། གྱུལ་ས་གཏིང་སྤང་ཅིགས། དེའི་སྐས་ལྷ་ཆེན་བླ་ར། དེའི་སྐས་ལྷ་  
 ཆེན་བླ་གན་། གྱུལ་པོ་དེ་འབྲུག་པ་ལ་ཤིན་དུ་དགའ་བ་ཅིག་ཡོད་པས། ཤེལ་པ་  
 དང་བསྐྲངས་ནས། སྒྲིབ་གྱུལ་པོ་གཤམ་འབྲུལ་ལྷའི་སྐས་བྱ་སྒོ་བྲོས་མཆོག་ལྷན།  
 རྒྱང་པ་ཡ་ལི། སྐབ་བཏུན་དར་གྱིས་ནྐམས་པལ་ནས་མངའ་འོག་དུ་བསྐྱུས། དེའི་  
 སྐས་ལྷ་ཆེན་ལྷ་དབང་ནྐམ་གྱུལ་དང་། བཏ་ཤིས་ནྐམ་གྱུལ་གཉིས་༢། ལྷ་དབང་ནྐམ་  
 གྱུལ་དེ་སྐྱེ་སྒྲོ་བས་དང་སྐྱེ་ཙལ་ཤིན་དུ་ཆེ་བ་ཞིག་ཡོད་པ་ལ། ཆུང་བ་བཏ་ཤིས་ནྐམ་  
 གྱུལ་གཡོ་ཆེ་བ་ཡོད་པས། ཇོ་བོའི་སྐྱན་བཏོན་ནས། གདུང་བཟྱད་ཀྱི་ཕྱིར་བཅུན་  
 མོ་དང་བཅས་ནས་ཡིངས་སྒྲིབ་དུ་བཞག་གོ། དེའི་སྐས་ལྷ་ཆེན་ཆོ་དབང་ནྐམ་གྱུལ།  
 ནྐམ་གྱུལ་མགོན་པོ། འཇམ་དབྱངས་ནྐམ་གྱུལ་དང་གསུམ་འབྲུངས་སོ། སྐས་  
 གསུམ་པོ་དེ་སྐྱེ་སྒྲིབ་ཤིན་དུ་ཆེ་བས། གཞན་གྱི་ལོ་སྒྲིབ་པས་ཁོང་གི་ལྷ་སྒྲིབ་ཆེ་

\* More correctly : དམར་པོ་ནྐམས་ཀྱིས །



གཞན་གྱི་རྒྱ་སྤྱོད་པས་ཁོང་གི་ཞལ་སྤྱོད་ཆེ་བར་བྱུང་ངོ་། དེའི་དུས་སུ་གྲུལ་པོ་བྲག་  
 ཤེས་ཅིས་གྲུལ་གྱིས་གྲུལ་སྤྱོད་མཛད་དོ། གྲུལ་པོ་དེས་ཕུ་རིག་གུན་ཆད། བྱོ་ཤོད་  
 མན་ཆད་མངའ་ལོག་དུ་བསྐྱུས་ནས། ཉི་ཁྱུ་བསམ་གྱིས་མི་ཁྱབ་པ་ཁྱོངས། སྐྱུ་མཁར་  
 སྤེལ་ཅིས་གྲུལ་ཅེ་མོ་དང་། རྒྱ་བློའི་གོང་ཁྱེར་བཏབ། ཉོར་གྱི་དམག་བྱུང་བ་ལ་འཐབ་  
 པས། ཉོར་མང་པོ་བསད། ཅིས་གྲུལ་ཅེ་མོར་མགོན་ཁང་བཞེངས་ནས། ཉོར་གྱི་  
 རོ་ཐམས་ཅད་མགོན་པོའི་ཞབས་ལོག་དུ་མནན། (གཞན་ཡང་མགོན་ཁང་བཞེངས་  
 མཐའ་དམག་རྒྱུག་པའི་སྤྱི་མནན་\*) །) འབྲི་ཁང་ནས་ཆོས་རྩེ་ལྷན་མ་ཞེས་པའི་  
 སངས་གྲུས་དངོས་དེ་གདན་དྲངས་ནས། སྐང་སྤྱོད་པ་བྲག་ཤེས་ཆོས་རྩེ་ཞེས་པའི་  
 དགོན་པ་བཏབ། ཡུལ་ཡུལ་ནས་བཅུན་ཁྲལ་བཏབ་ནས། བསྐྱབ་གྱུད་ཀྱི་བསྟན་པ་  
 བཅུགས། དགོན་པ་མཐོང་བའི་ས་མཚམས་སུ་དར་ཆེན་འཕྱར་ནས། འདིའི་  
 མདུན་དུ་ཀྲོན་ས། རྒྱུན་ས། མདོར་ན་གྲུལ་པོའི་སྐྱུ་མཁར་སྐྱུ་སྤྱོད་ལ་བསྐྱོས་པའི་  
 མི་ཡོད་ཀྱང་། དེའི་མདུན་དུ་རྒྱུད་པ་ཅས་གྲིས་གནག་ལས་ཐར་བར་མཛད་དོ། གཞན་  
 ཡང་འབྲི་ཁང་། ས་སྐྱུ། དགོ་ལྷན། ལྷ་ས། བསམ་ཡས་ཅིས་སུ་གདན་བཞུགས།  
 གསེར་ཆབ། དར་ཆེན། མང་ཇ། བགྱི་འབྲུལ་སོགས་དང་། བཀའ་འབྱུར། བསྟན་  
 འབྱུར། གཞན་ཡང་གྲོགས་བམ་མང་པོ་དང་། མཆོད་རྟེན་མང་པོ་བཞེངས་སོ།  
 དེ་ནས་སྤེལ་པའི་གྲུལ་པོ་ཆོ་དབང་ཅིས་ཀྱིས་དེ་གྲུལ་སྤྱོད་ལ་མངའ་གསོལ་ནས།  
 སྐྱུ་ན་གཞིན་དུས་དམག་མཛད་པས། ཤར་ངས་རིངས་མན་ཆད། རྒྱོ་བོ་དང་།  
 ཕུ་བྱངས། བྱ་གེ་ལ་སོགས་པ་མངའ་ལོག་དུ་བསྐྱུས། རྒྱོ་ཕྱོགས་འཛུམ་ལང་།  
 ཉུང་དི། ལུབ་ཕྱོགས་ཤི་དཀར་དང་། ཁ་དཀར་རྩྭ་ཆོད་མངའ་ལོག་དུ་བསྐྱུས།

\* From MS. B only.

† (read སྐང་སྤྱོད་)।

བྱང་ཉེར་ལ་དམག་གྱུབ་གསུང་བ་ལ། རྒྱལ་ར་བ་ལྷོ་མ་གྱིས་ལྷ་བ་ཕུལ་ནས་མ་  
 མཛད། གཞན་དེ་ལྷོ་མ་གྱི་ཆོ་ཀུན་\*གདེ་བ་ལ་བྱོངས། མཁར་ལྷོ་མ་ལ་སྐྱེ་ཆ་བ་  
 བཞག་ནས། མར་ཕུལ་ཐམས་ཅད་དར་ཞིང་གྱིས་པ་ཡིན་ནོ། གྲུ་གེ་ནས་བྲལ་དང་  
 དཔྱུ་འབྲལ་བ་ལ། ལོ་རེ་ལ་གསེར་ཞོ་སྤུམ་བཟྱ། རུ་ཐོགས་ནས་གསེར་ཞོ་ཉི་བཟྱ་  
 དང་དུག་ཅུ། ཆོར་མོ་བཟྱ། ཆིབས་གཅིག་བཅོས་ཀྱི་སྤུལ་བ་བཅུ། འཁར་ཨོ་ཞོང་  
 དང་། ཞིང་དར་ཆེན་དར་ཅུང་ལྷོ་མ་དང་། གཞན་ཡང་བྲལ་དཔྱུ་ལ་སོགས་ཕྱོགས་  
 ཕྱོགས་ནས་འབྲལ་བ་བསམ་གྱིས་མི་བྱལ་བོ། གྱུལ་པོ་དེའི་ཐུགས་དགོངས་ལ།  
 ལྷ་ས་དང་། གྲུ་གེའི་མཐོ་ཁྲིང་ལྷོ་མ་གྱི་ཐིག་ཚད་བྱས་ནས། སྤར་ཡབ་མེས་ལྷོ་མ་  
 ཀྱིས་སངས་གྱིས་ཀྱི་སྤང་པོའི་གདུང་ཡང་ཅེ་མོར་བཞག་པས། མི་ལྷོ་མ་གྱིས་  
 མཇལ་ཁ། ཕུག་མཚོད་པ། ལྷོ་ར་བ་སོགས་མི་འགོ་བ་འདུག་པས། དངས་དེའི་  
 ཆབ་ལ་གཙུག་ལག་ཁང་བཞེངས་ནས། སངས་གྱིས་ཀྱི་བསྟན་པ་མེས་རལ་བ་ཅན་  
 ལྷ་བྱ་ཅིག་བྱེད་དགོས་དགོངས་པ་ལ། སེམས་ཅན་གྱི་ལས་ཟད་པས། གྱུལ་པོ་  
 དེ་སྐྱེ་བདེ་བར་གཤེགས་སོ། དེ་དང་གྱུལ་ཕྱན་ལྷོ་མ་ཕྱོགས་ཕྱོགས་ནས་ལངས།  
 དེ་ནས་འཇམ་དབྱངས་ལྷོ་མ་གྱིས་གྱུལ་སྤྱིད་མཛད་ཀྱི། གྱུལ་པོ་དེའི་དུས་བྱ་སྤུ་  
 རིག་གི་ཆོ་གཉིས་མ་མཐུན་ནས། ཆོ་རིང་མ་ལིག་ཟེར་བ་ཅིག་གི་དབྱང་ལ་ལ་དུགས་  
 ཀྱི་དམག་བྱིར་བས། དུས་ཀྱི་འགྱིབ་དུས་དང་། གྱུལ་བྲིམས་ཀྱི་ཉམས་དུས་ལ་  
 བབ་པས། རང་གོང་དམག་དཔོན་ཨ་ལི་མིར་གྱི་དམག་རྡོལ་བ་དང་ཐུག། ཁོ་ཡིས་  
 གཡོ་བྱས་ནས་ཞག་ཅི་འགོ་བྱས། དེ་དང་ལ་ལུང་ཐམས་ཅད་ཁ་བས་བཀག་ནས།

\* Schl's MS. (ཆོ་ཀུན་) དང་ཆན་མདེ་པའི་བཀའ་ཐུག་མདེ་པ་ལ་ཞུའོ།

† Schl's MS. here adds འགྲོ་བ་ལེམས་ཅན་གྱི་དོན་དུ།

༡ འཇམ་དབྱངས་ལྷོ་མ་གྱིས།

གྲུལ་པོ་དམག་དང་བཅས་པ་གར་ལོག་ལ་ཡལ། ལ་དྲགས་ཐམས་ཅད་ལ་སྤུལ་དེ་  
 རྒྱགས་ནས། གསུང་རབ་ཐམས་ཅད་མེ་ལ་བསྒྲིགས། ལ་ལ་ཆབ་ལ་བཀལ། གཙུག་  
 ལག་ཁང་ཐམས་ཅད་བཞག་ནས། རང་གི་ཡུལ་ལ་ལོག་སོང་། དེ་ནས་ཨ་ལི་མིར་  
 ཤེར་ནན་གྱི་སྤྲུལ་མོ་གྲུལ་ཁ་ཐུན་ཞེས་པ་སྒྲོལ་མ་དཀར་མེའི་རྩིས་སྤུལ་པ་དེ་འཇམ་  
 དབྱངས་རྩིས་གྲུལ་ལ་བཙན་མེར་སྤུལ་ནས། (བཞུགས་པའི་རིང་པོ་མ་ལོན་པར་  
 ཨ་ལི་མིར་གྱིས་མི་ལས་དུ། ཁོང་རང་གི་མཁར་ཡོག་གཅང་པོ་ལས་སོང༌། ཅེག་  
 ཐོན་ནར་གྲུལ་ཁ་ཐུན་ལ་(ཐིམ་)\*པར་མཐོང་བ་དང་དུས་མཚུངས་གྲུལ་ཁ་ཐུན་ལ་  
 སེམས་ཅན་དང་ལྷན་པར་གྱུར། དེ་ནས་ཨ་ལི་མིར་གྱིས་འཇམ་དབྱངས་རྩིས་གྲུལ་  
 ཁྲི་ཕྱིང་དུ་བཞུགས་སུ་གསོལ། དམག་རྩིས་ལ་སྤོན་མོ་བྱས་ནས། གྲུལ་ཁ་ཐུན་  
 ཀྱང་གྲུལ་དུ་མས་བཙན་དེ་ཨ་ལི་མིར་གྱིས་གསོལ་བ། ཁ་སང་ངས་མི་ལས་དུ་  
 མདུན་མཚོ་ནས་སོང༌། ཅེག་ནར་གྱིས་མཚོངས་ནས། གྲུལ་ཁ་ཐུན་ལ་(ཐིམ་)\*\*པར་  
 མཐོང་། དེ་དང་དུས་མཚུངས་བྱ་མོ་འདི་ལའང་སེམས་ཅན་དང་ལྷན་པར་གྱུར།  
 འདི་ལ་བྱ་ཞིག་ངས་པར་སྒྲེ་མིང་དུ་སོང༌། རྩིས་གྲུལ་ཐོགས་ཟེར་ནས། ལ་དྲགས་ཀྱི་  
 དམག་དང་བཅས་གནང་ནས་གྲུལ་སྤོང་ལ་དབང་བ་ཡིན་ནོ།† དེ་ལ་སྤྲུལ་གཉིས་  
 འབྱུངས་དེ། སོང༌། རྩིས་གྲུལ་དང་། རྩིས་བྱ་རྩིས་གྲུལ་གཉིས་སོ། དེའི་དུས་སུ་འཇམ་  
 དབྱངས་རྩིས་གྲུལ་གྱི་ཐུགས་དགོངས་ལ། དང་པོ་ངས་སྤྱ་རིག་ཚེ་རིང་མ་ལིག་གི་  
 དཔྱང་ལ་དམག་ཁྲིར་བའི་ལན་ལ། ལ་དྲགས་ཐམས་ཅད་ཞིག། དངས་སངས་  
 གྱིས་ཀྱི་བསྟན་པ་དར་བའི་ཐབས་ཤིག་ཅི་བྱས་ནས་དར་བར་བྱ་དགོས་པ་ལ།

\* This word is torn off in the MS. I give the word which, according to popular belief, would be the correct rendering.

† This entire passage is omitted in all the MSS. but B, neither is it contained in Schl.'s edition.



མངས་གྱིས་ཀྱི་བསྟན་པ་མི་སྒེལ་རག་ལས་པ་ཡིན་པས། དངས་མི་སྒེལ་བྲལ་  
 བྱུང་སོགས་མེད་པ་བྱ་བཞིན་བསྐྱང་དགོས་སྟུགས་ནས། ཡུལ་ཁྱོགས་ལན་གསུམ་  
 ལྟོམས་ནས། གྱུལ་པོ་འདིས་བྱ་རིག་གྱུན་ཆད། བྱང་ཅེ་མན་ཆོད་མངའ་འོག་དུ་  
 བསྐྱུས་ནས། གྱུལ་ཁ་ཐུན་གྱི་སྒོན་དུ་འཛིག་དེན་དབང་ཕྱུག་གི་སྤྲུལ་མོ་ཆོ་རིང་གྱུལ་  
 མོ་ཁབ་དུ་བཞེས་པ་ལ། སྤྲུལ་ཁ་དབང་རྣམས་གྱུལ་དང་། བསྟན་འཛིན་རྣམས་གྱུལ་  
 གཉིས་འབྲུངས། གཞན་ཡང་སྤྲུལ་འདི་གཉིས་ཀྱིས་དབུས་གཙང་དུ་ཆོ་བ་རིན་པོ་  
 ཆེའི་བྱང་དུ་གསེར་ཆབ། གདན་བཞུགས། འབྲས་སྦྱངས། ར་ལྷང་རྣམས་སྦྱ་  
 གསེར། དུལ། སྦྱ་དྲིག། བྱི་རུ། སྒྲོས་ཤེལ། ཅབ་དར། མང་ཇ་ལ་སོགས་པའི་  
 བརྒྱུ་འབྲུལ། དེ་རྣམས་སྦྱ་དར་ཆེན་དང་། འབྲུག་པ་སྦྱལ་སྦྱ་གདན་འཛིན་པའི་པོ་  
 ཉ་སོགས་ཀྱང་ཇོངས་སོ། སྦྱའི་གྱི་མར་གྱི་དྲོག་གསེར་གསུམ་དང་། དཀར་གྱི་དུང་  
 གསེར་འཕྲེང་སོགས་གསེར་དུལ་ཟངས་གསུམ་ལ་བཞེངས་ནས། གྱི་མ་ཕྱག་  
 ཇེས་སྦྱ། སྦྱལ་དེས་མེལ་བསྐྱེགས་པ་རྣམས་སྦྱར་དེའི་ཆབ་བཞེང་བའི་ཐུགས་  
 བསམ་ཤིན་དུ་ཆེ་བ་ཡོད་ཀྱང་། སྦྱ་ཆོ་ཐུང་བས་བདེ་བར་གཤེགས་སོ། དེའི་སྤྲུལ་  
 ཆོས་ཀྱི་གྱུལ་པོ་སོ་རྒྱུ་རྣམས་གྱུལ་འདི་རྒྱང་བུའི་དུས་ནས་སྦྱ་ལྟོབས་ཤིན་དུ་ཆེ་བས།  
 བྱུང་དང་། བང་དང་། མཆོང་དང་། མདའ་དང་། སྒྲོག་དང་། ཏྲ་སྦྱ་དང་། སྦྱ་ཙམ་  
 ཐམས་ཅད་སྒོན་གྱི་ཟས་གཙང་སྤྲུལ་པོ་དོན་གྲུབ་ལྟ་བུའོ། གྱུལ་པོ་དེས་སྦྱ་ན་གཞིན་  
 རུལ། གྱ་གི་ཕྱི་འབྲོག་ལ་དམག་མཛད་ནས། དེ་སེའི་བྱང་གྱུལ་ཚུན་ཆོད་ལ་བབྱུབ།  
 ཏྲ་གཡག་ར་ལྷག་ལ་སོགས་པ་ས་གཞི་གང་\*ནས་ཁྱོངས། དེའི་དྲིང་གྱ་གི་ནང་ལ་

༡ སོ་རྒྱུ་རྣམས།

\* Schl.'s edition and MS. B have both བྱས་དང་ which may also be correct.



དམག་མཛོད་ནས་ཤུང་དང་ཞུ་ཡི་གཉིས་མར་ཐག་ལ་བདང་ནས། ལ་དུགས་  
 ཐམས་ཅད་གཡག་ལྷག་གིས་ཁངས། ཅུ་ཤོད་བདག་མོ་བསྐལ་བཟང་སྒྲོལ་ས་གྲུལ་  
 མོ་ཁབ་དུ་བཞེས། བྱུང་ཐོབ་ཀྱི་གྲུལ་པོ་སྟག་ཚང་རས་ཆེན་ཞེས་བྱ་བ། གྱི་གར།  
 ཨོ་གྱིན། ཁ་ཆེ་སོགས་དང་། བྱུང་ཐོབ་བཟྱེད་ཅུ་ཐམས་ཅད་ཀྱི་ཞལ་མཛོད་སྟུམ་དུ་  
 གཟིགས་པའི་འཇའ་ལུས་བྱུང་པའི་སངས་གྲུས་དེ་གདན་དྲངས་ནས། ཡབ་ཀྱི་  
 དགོངས་ཚིགས་ལ་བབ་སྒྲེར་གསེར་ཟངས་ཀྱི་བྱམས་པ་དགའ་ལོ་བཟྱེད་པའི་སྒྲུ་  
 ཚད་རིན་པོ་ཆེ་སྒྲོ་ཚོགས་ཀྱིས་སྒྲུས་པ་དང་། གྱི་གར་ཤར་རྒྱབ་ཐམས་ཅད་ཀྱི་གྱི་ལྷ་  
 ཐམས་ཅད་གདན་དྲངས་ནས། བྱམས་ཚེས་སྡེ་ལྔ་པོ་དེ་ལྔ་བཞེངས། གྱི་ཚད་དགེ་  
 སྒྲོང་ལྔ་བསྐལ་པ་ནམ་གནས་སྟུ་བཙུགས་ནས། མཚོད་པ། མར་མེ་ཉིན་འབར་  
 མཚན་འབར། གྱི་གོས་ལ་མཚན་པ་མང་པོའི་པན། གྱིལ་མཚན། དར་ཆེན་ལ་  
 སོགས་པ་བཙུགས། གཞན་ཡང་འཕགས་པ་རབ་འབྱོར་གྱི་སྒྲུའི་སྒྲེ་བ། བཏ་  
 ཆེན་ཚེས་ཀྱི་གྲུལ་མཚན་གྱི་སྒྲུ་དྲུང་དུ། ཡུམ་གྱི་དགོངས་ཚིགས་ལ། གསེར་གྱི་  
 འབྲུམ་ཚང་དང་། དབུལ་གྱི་འབྲུམ་ཚང་། སྒྲོས་ཤེལ་ཀྱུ་ཤུ་ཙམ་བཟྱེ་ཙ། དེ་བས་  
 སྤྲ་བ་བཟྱེ་ཙ། གྱི་ཅུ་བྱ་མའི་སྒྲོང་ཙམ་བཟྱེ་ཙ། ལྷ་དྲིལ་བཟྱེ་སྟན་ཙམ་བཟྱེ་ཙ་  
 དང་། གཞན་སྤྲ་མོ་མང་པོ་དང་། (.....) ལྷ་ས་ཁྲ་འབྲུག་བསམ་ཡས་སོགས་ལ་  
 རྟོང་མཚོད། དགེ་འབྲས་མེར། འབྲུག། ར་ལུང་། ས་སྒྲུ། གཞན་ཡང་དགོན་སྡེ་  
 ཆེ་སྤྲ་ཐམས་ཅད་ལ་བཟྱེ་འབྲུལ་མང་སྒྲོལ་བཙས་གྱི་ཆེ་བ་དང་།) བྱུང་ཐོབ་སྟག་  
 ཚང་རས་ཆེན་དེ་ཉིད་ལ་རང་ཞབས་ཀྱི་ཡུལ་ཁག་སོ་སོ་ནས་ས་སྤྱད་མཚོད་གཞིས་

\* MS. A has དམར་ཐག།

† MS. B, i. e., སྒྲུའི་སྒྲེ་བ་ has སྒྲུལ་པ་།

‡ Passage in B only; the first word is illegible.

སོགས་གྱི་ཆེ་བ་འབྲུལ་ནས། ལྷག་ཚང་རས་ཆེན་གྱིས་ལྷམ་ལེ། བཏུ་ཤིས་སྦྱང་།  
 ཉེ་མི། ཐེག་མཆོག་ལ་སོགས་པའི་དགོན་སྡེ་ནི་མས། ཡབ་སོ་དྲེ་ནི་མ་གྱི་ལ་དང་།  
 ལྷམ་བདེ་ལྷན་ནི་མ་གྱི་ལ་གཉིས། ཡབ་ཀྱི་སྐྱེ་ཆེ་སྦྱང་དང་། ལྷམ་ཀྱི་སྐྱེ་ཆེ་སྦྱོར་  
 ལྷམ་སྐྱེ་ཆེ་ལྷག་པར་བསྐྱབས་ནས། སངས་གྱིས་ཀྱི་བསྐྱབས་པ་དར་ཞིང་གྱིས།  
 (གྱི་ལ་ཁམས་ཐམས་ཅད་དག་བཅུའི་བྱིས་ཀྱིས་འཛོལ་ཞིང་། འཛིག་དྲེན་གྱི་ཁམས་  
 ལྷ་ཡང་གྱི་ལ་པོ་སོ་དྲེ་འདྲ་བ་ལ་སྦྱ་མ་ལྷག་འདྲ་བ་མཆོད་ཡོན་ཉི་ལྷ་ཟུང་གཅིག་  
 ཅེས་གྲགས་པས་ས་སྤྱང་བྱུང་བར་གྱུར། དེ་ནས་སོ་དྲེ་ནི་མ་གྱི་ལ་གྱི་དགོངས་པ་ལ།  
 ཡབ་ཆེན་ཆོ་དབང་ནི་མ་གྱི་ལ་གྱིས་ཤར་བྱང་ངས་རིངས་ཚུན་ལ་སངས་མཆོད་ཀྱང་།  
 སྐྱེ་ཆེ་ཐུང་བས། ཡབ་འཇམ་དབྱངས་ནི་མ་གྱི་ལ་གྱི་དུས་སྐྱེ་ལྷམ་སྐྱེ་ལྷམ་སྐྱེ་ལྷམ་སྐྱེ་  
 ལངས་འདུག\* ) ལྷམ་ཡང་བྱང་ངས་རིངས་ཐུག་དམག་ལ་ཆས་པས། ཤི་རི་  
 དཀར་མོར་ཆགས། དེ་ནས་བོད་ནས་པོ་ཉ་འབྱོར་ནས། ལྷམ་གྱི་གཙོ་མཆོས་ས་  
 དབྱ་གཙང་སོ་ཚུན་སངས་ཞབས་སྐྱེ་བསྐྱེས། ཕྱིར་ལོག་པེབས་སྐབས་ལྷམ་ལེར་སྐྱེ་  
 བདེ་བར་གཤེགས་སོ།)†

ལྷམ་ལེ། སྐོད་ལུལ། ཁ་ནག། གཙང་དམར། སྐྱེ་དམར་ནང་། མེ་ཅུ། དར་  
 ཅོ་སོགས་ཀྱི་མི་སེར་གང་པོ་དང་། གཞན་ཡང་ལ་དུགས་སྦྱོར་གཤམ་དང་། མངའ་  
 ཞབས་གང་ཡོད་ན་མཆོད་གཞིས། ས་སྐྱེ་དུ་བསྐྱེལ་བ་ནས་གནས་ཀྱི་བར་དུ་སྐྱེ།  
 ལྷམ་པོ་ཆེན་པོ་ལྷག་ཚང་རས་ཆེན་གྱིས་ཉེ་མི། ལྷམ་པོ། ལྷམ་ལེ། བཏུ་ཤིས་  
 སྦྱང་སོགས་ཀྱི་དགོན་པ་བཞེངས་ནས། གསེར་དབྱེལ་ཟངས་གསུམ་ལ་གྱུ་བཅས་

\* This sentence seems incomplete.

† From B only, it is not free from Ladakh provincialisms, and probably somewhat defective.

‡ Schl.'s edition gives the names of the monasteries: ཉེ་མི་=ཐུང་རྒྱལ་པམ་མ་  
 སྐོང་། ལྷམ་པོ་=ཐེག་མཆོག། ལྷམ་ལེ་=པད་ཆེན།

སྐུ་དང་མཆོད་རྟེན་(མང་པོ་བཞེངས།) དགོ་འདུན་གྱི་སྒྲེ་སོགས་གྱུ་ཆར་མཛད་  
 གྱུ་ལ་པོ་སོ་རྒྱུ་ལྟོ་ལྟོ་གྱུ་ལ་གྱིས། ཡབ་བདེ་གཤེགས་འཇམ་དབྱངས་ནོམ་གྱུ་ལ་གྱི་  
 དགོངས་རྒྱུ་ལ། བབ་སྒྲོར་གསེར་ཟངས་གྱི་གྱུ་ལ་བ་བུམས་པའི་སྐུ་ཐོག་སོ་  
 གསུམ་པ་ཅིག་བཞེངས་ནས། རིན་པོ་ཆེ་དང་། གཡུ། གྱི་ཅའི་གྱུ་སོགས་ཕུལ་  
 དབུས་སྤུ་པའ་ཆེན་རིན་པོ་ཆེ་ལ། གསེར་དུལ་མང་པོ་དང་། ལྷ་དྲིག་གྱུ་སྒྲན་ཅམ་  
 བཟྱ་ཙྰ། གྱི་ཅའི་སྒྲོང་ཙམ་བཟྱ་ཙྰ། སྒྲོས་ཤེལ་ཀྱུ་ཤུ་ཙམ་བཟྱ་ཙྰ་བཙས་གྱི།  
 འབྲུལ་བ། གྲུབ་ཐོབ་ཆེན་ལྷག་ཚང་རས་ཆེན་མཛོག་ཏུ། 5་100། གཡམ་ག་100་  
 སྒྲང་100། ལུག་1000། ར་1000། དུལ་1000། གསེར་ཞོ་100། འབྲུ་ཁལ།  
 3000། ལྷ་དྲིག་གི་ཐོང་བ། གྱི་ཅའི་ཐོང་བ། གཡུའི་ཐོང་བ། མེ་མདའ་34་  
 མདུང་34། རལ་གྱི་34། སྒབ་24། གོས་ཆེན་ཡུག་34། རྒྱུ་ཁབ་ཡུག་20།  
 མེན་སྒྲིང་ཡུག་34། ཁ་བདགས་ཨ་ཤེ་ཡུག་34་བཙས་འབྲུལ་བ་བསམ་གྱིས་མི་  
 སྒབ་པ་ཕུལ། དེ་ནས་སྤྱི་ཆེན་དཔལ་མཁར་དགུ་ཐོག་ཁོ་ངོ་གསུམ་ནང་བཞེངས་  
 བསྐྱབས་ནས། ནང་རྟེན་གསེར་དུལ་ལ་གྱུ་བཙས་མང་པོ། གསེར་དུལ་ཟངས་  
 གསུམ་གྱི་བཀའ་འབྲུར་དང་། གཞན་ཡང་སྤྱིགས་བམ་པོ་དེ་མང་པོ་བཞེངས།॥

## A.

## Translation.

This (Lde-pal-k'or-tsan's)<sup>1</sup> sons were: *Skid-lde-nyi-ma-gon* and *Ta-shis-tsegs-pal*<sup>2</sup>, these two. *Skyid-lde-nyi-ma-gon*, when on his way to

<sup>1</sup> The Gyal-rabs-sal-wai-me-long (Gyalr. s. m.) MS. in my possession further explains, that Lde-pal-k'or-tsan (Gyalr. s. m. Ie-pal<sup>o</sup>) was the son of Od-shung, the legitimate son of Lang-dar-ma. Od-shung's claim to the throne was contested by Yum-stan, the suppositious son of the 'great' queen (the first wife), Od-shung being the true son of the 'lesser' queen (second wife).

<sup>2</sup> Skyid-lde<sup>o</sup> and Ta-shis<sup>o</sup>, the one the son of the 'great', the other of the 'lesser' wife of Lde-pal<sup>o</sup>, were both robbed of all their possessions in Tibet proper by Yum-stan, and fled to 'Nga-rigs' (i. e., Nga-ris-kor-sum). From Skyid-lde<sup>o</sup> the kings of 'Nga-rigs' derive their pedigree; from Ta-shis<sup>o</sup>, the chiefs of Yar-lung (Gyalr.



Upper Nga-ris—Tibet proper being in a state of revolution<sup>3</sup>—and accompanied by a hundred horsemen under the leadership<sup>4</sup> of Bal-ma-zug-tsan, K'ong-mo-nyag-pa (and) A-ka-wadzra, these three, (happened to be in so straitened circumstances) that he had nothing to eat but eggs and fish. Now (his servants) brought him (this dish) covered with a napkin. From this it has come to be a custom with the kings of Tibet to use the (so-called) 'Giant's Napkin.'<sup>5</sup> Eventually he arrived at Ra-lai-gyud.<sup>6</sup> He built K'ar-mar<sup>6</sup> in the Horse-year,<sup>7</sup> Tse-sho-gya-ri<sup>8</sup> in the Sheep-year. He caused many villages and hamlets<sup>9</sup> to be built throughout the broad valleys of Dam and Lag.<sup>10</sup> Mar-yul<sup>11</sup> he left undisturbed.

s. m.).—The word Lde, in this and other names, Koeppen (II, 52) assumes to be identical with lte-wa, 'navel, umbilicus, centre.' I find, however, that wherever lte-wa has the meaning of 'navel' etc., it is never spelt lde, so that I feel inclined to search for another meaning of lde.

<sup>3</sup> Schl's ed. has: རྩེད་ལོན་གྱི་ A MS. རྩེད་ལོན་གྱི་ Gyalr. s. m. རོན་ལོན་གྱི་ A learned Lama, Ṭa-shis-stan-p'el († Dec. 1890), informed me that in his opinion རྩེད་ལོན་གྱི་ should be substituted. As to the meaning, there can be no doubt, that it is as given in the translation.

<sup>4</sup> གཡུམ་ཁྱིམ་གཙོ་བོ་སྐུ་པ་འདི་དྲུག་པ་བཅུ་ : 'one hundred horsemen, whereof the most prominent were the three etc.' Similar phrases occur frequently throughout these documents, also relating to weapons and turquois (p. 123), monasteries (Schl's ed., p. 30a), etc.

<sup>5</sup> With the Rājās of Ladakh it is still in use under the name of Sang-K'ebbs (གསང་ཁེབས་) 'cover of the hidden thing.'

<sup>6</sup> Said to be a Steppe-district inhabited by nomads, beyond Ru-t'og; near it the ruins of an old castle, called K'ar-mar, still exist.

<sup>7</sup> These definitions of years without the number of the cycle of 60 are quite useless. Relating to human beings, the name of the year, in which they were born, usually suffices to determine their age, as their appearance and features clearly enough indicate through how many cycles of twelve years they may have lived. But relating to cities etc., after the lapse of centuries, no such corroborative evidence usually is available, and hence the name of the year alone is no clue to their age.

<sup>8</sup> Not known.

<sup>9</sup> བོད་རྩེ་ Several of the places, designated by this term and mentioned here, still exist and may be inspected any day. It must be said that they are not 'towns,' but merely 'hamlets.'

<sup>10</sup> Not known. In the Upper Sutlej valley (map of Turkestan, 4 sheets, 1882) I find, however, the names Dam and Luk,—could they have any connection with the places referred to here?

<sup>11</sup> Mar-yul and Mang-yul, (according to Ṭa-shis-stan-p'el, derived from a word me-ru, meaning 'bare rocks') includes Upper and Lower Ladakh, Nub-ra (comp. page 122), Zangs-kar etc.



At that time, of Mar-yul Upper Ladakh<sup>12</sup> was held by the descendants of Ge-sar,<sup>13</sup> whilst Lower (Ladakh) was split up into various independent principalities.

At that time Ge-shes-tsan<sup>14</sup> (was sent) to Pu-rang, where he asked and obtained the hand of Do-za-k'or-skyong. He married her and she bore him three sons. He now built the palatial residence of Nyi-zungs<sup>15</sup>

<sup>12</sup> ཅེ་ལཱ the Persian transliteration of the word ཅེ་ལཱ་ is certainly not warranted by the pronunciation of the word in Ladakh itself, where everybody says 'La-da-q', but I am informed by the Rev. J. Weber of Pu in Kunawar, that in that district the terminal -ལཱ་ is invariably pronounced like ཅེ or *ch* in 'loch'; this may account for the transliteration in Persian. The boundary between Upper and Lower Ladakh is the plateau between Basgo and Saspola (Survey Map : Bazgo and Saspol).

<sup>13</sup> Ge-sar, the name of a fabulous king of Tibet, or more correctly of the 'Ling-' people (ལིང་), and champion of the Lamaistic faith. He is not in any way connected with the kings of Tibet properly so called, and in the annals of these kings, so far as they are contained in the Gyalr. s. m., he is referred to only once, viz., as one of the suitors of Kong-go, the Chinese princess, who afterwards became the wife of Shong-tsan-gam-po (chap. 13: བོ་སྐར་རྒྱལ་མཚན་གྱི་ཐུག་པོ་). His wars against the Iang, Hor and the Chinese form the subject of an elaborate epic, the epic of Tibet. The parts relating to the Iang- and Hor-wars are printed and published, but the story of the war against the Chinese, I am told, is kept secret, lest the Chinaman should be too much offended by its publication. The narrative itself is not in metre, but in prose, but there is only very little of it, as compared with the number of speeches, songs etc. which are in metre. The 'Iang-war' is in the K'ams dialect, and for this reason difficult to read to us in Ladakh. The 'Hor-war' is much easier. The epic is popular throughout Tibet, but people in Purig are said to know more of it than anyone else. In Ladakh the Bhe-da (professional musicians) do much towards its preservation, by rehearsing portions of it on festive occasions, to which they are invited to provide the musical part of the entertainment. Consequently most of the people are familiar with the names of the chief heroes and the general drift of the story, and indeed, if interrogated regarding it, will grow quite enthusiastic in their praises of the same. The Mongol version of the story (Translation into German by I. J. Schmidt, 1839) is very different from the Tibetan version, inasmuch as it dwells mainly on the exploits of Ge-sar when a boy and young man. Still, it is possible, that the war against the Kháns of Shiraighol and the 'Hor-war' may be identical as to their subject-matter.—In a house at Leh, belonging to one of the old Ka-lon (State-minister) families, illustrations of the story of Ge-sar may still be seen painted on the wall all round one of the rooms.—My own small collection of Tibetan MSS. includes parts of the 'Iang-' and 'Hor-wars.'

<sup>14</sup> Translation doubtful. It depends upon the exact meaning of Ge-shes-tsan.

<sup>15</sup> Said to be in Pu-rang.

along with the city,<sup>16</sup> and then conquered Nga-ris-skor-sum<sup>17</sup> completely. He ruled in accordance with the Faith.

His three sons were: Lha-ch'en-pal-gyi-gon,<sup>18</sup> Ṭa-shis-gon, the second, Lde-tsub-gon, the youngest. He gave to each of these three sons a separate kingdom,<sup>19</sup> viz., to (I) PAL-GYI-GON: his dominions were Mar-yul, the inhabitants using black bows, in the east, Ru-t'og and the gold mine of Gog,<sup>20</sup> nearer this way Lde-ch'og-kar-po,<sup>21</sup> at the frontier Ra-wa-mar-po,<sup>22</sup> Wam-le<sup>23</sup> and to the top of the pass of the Yi-mig-rock;<sup>24</sup> to the west, the foot of the Kashmir pass<sup>25</sup> from the cavernous stone<sup>26</sup> upwards hither;<sup>27</sup> to the north,<sup>28</sup> to the gold mine of Gog: all the districts included (within these limits). To Ṭa-shis-gon, (his)

<sup>16</sup> ཐུག་ས་ does not necessarily mean a large city, but rather a village connected with a royal palace (e. g., Ting-gang, now Ting-mo-gang, near Nyur-la, is called a ཐུག་ས་ but is merely a village.)

<sup>17</sup> Nga-ris-kor-sum usually includes the districts of Ru-t'og, Gu-ge and Pu-rang only. Here, however, it seems to include all Ladakh, Zangs-kar etc. as well.

<sup>18</sup> Lha-ch'en is an epithet usually applied to the eldest son only, and may mean 'the heir-apparent'; it is not a component part of the name, as it may be omitted (see 3 lines further down). It dropped out of use from the time of Ts'e-wang-nam-gyal (XX). (Comp. Lha-gchig = 'princess'.)

<sup>19</sup> All the three kings are included under the term (Gyalr. s. m.): རྩོན་ན་ བུ་ལྷན་པ་འི་མཁོན་གསུམ་ 'the three Lords of the Uplands.'

<sup>20</sup> Gog, not known. East and North seem to be quarters of heaven not definitely fixed in Ladakh geography. Here, Gog may be east or north; at some other place Ngam-ring is said to be east or north of Ladakh. Now Ngam-ring is known to be a place on the road to Lhasa, 21 marches this side of this city, and hence cannot possibly be to the north, but is to the west of Ladakh. An explanation, how this confusion came about, I am at a loss to give.

<sup>21</sup> ལང་ཁྱི་ said to be by Ṭa-shis-stan-p'el = མང་ཁྱི་ 'of the district lower down.' Lde-ch'og-kar-po = Dem-ch'og of the maps (Turk.). Near the frontier and on the river Indus.

<sup>22</sup> Not known.

<sup>23</sup> Wam-le = Han-le, famous for its magnificent Lamasery (picture in Cunningham, Ladakh).

<sup>24</sup> = Imis-La (map of Turk.), at the foot of which the Han-le stream has its source.

<sup>25</sup> i. e., the Zoji-la or Zoji-bal.

<sup>26</sup> Not known.

<sup>27</sup> To Ladakh people: 'going in the direction of Lha-sa' is 'going up,' 'coming away from there' is equal to 'going down.' (Comp. the word עלה in Hebrew.) Hence མན་ཆད་ always means, 'away from Lha-sa, down to here' = 'downwards hither;' ཡན་ཆད་ and རྩེན་ཆད་: 'going from Purig or any place west of Ladakh, Lha-sa direction, as far as Ladakh' = 'upwards hither.'

<sup>28</sup> See note 20.

second (son), he gave : Gu-ge, Pu-rang, Tse,<sup>29</sup> etc. To Lde-tsug-gon, (his) youngest (son), he gave : Zangs-kar-go-sum,<sup>30</sup> Spi-ti, Spi-lchogs,<sup>31</sup> etc.

Pal-gyi-gon, the eldest, had two sons : (II) Do-gon and Ch'os-gon.

The son of Do-gon was : (III) LHA-CH'EN-PAGS-PA-LDE.

His son was : (IV) LHA-CH'EN-JANG-CH'UB-SEM-PA.

His son was : (V) LHA-CH'EN-GYAL-PO. As to the reign of this king : he built the Lamasery of Lu-k'yil<sup>32</sup> and caused a brotherhood of Lamas<sup>33</sup> to settle down (there). He provided for a long time, with untiring (zeal), the recluses<sup>34</sup> that lived in the neighbourhood of the Kailása and the three lakes<sup>35</sup> with the necessities of life ; when they were numerous (there were) about five hundred, when few, one hundred.

His son was : (VI) LHA-CH'EN-UT-PA-LA. As to the reign of this king : after having united the forces of Upper and Lower Ladakh he invaded Nyung-ti.<sup>36</sup> The king of Nung-ti bound himself by oath, so long as the glaciers of the Kailása will not melt away, or the Manasarovar lake<sup>37</sup> dry up, to pay tribute and dues<sup>38</sup> (to the king of Ladakh), (*viz.*) Dzo<sup>39</sup>

<sup>29</sup> Not known.

<sup>30</sup> Go-sum, '3 doors,' may refer to the 3 valleys that join at the central part of Zangs-kar.

<sup>31</sup> Spi-ti, well-known district within British territory. As to Spi-lchogs I would venture to suggest, that Lahoul may be meant by this term. This district would have well rounded off his dominions and would have been the connecting link between Zangs-kar and Spi-ti. B MS., however, relating to the present century, has གཤམ་ལྷ་ Gar-zha, the usual Tibetan name for Lahoul.

<sup>32</sup> Schl.'s ed. and mlgö : Li-kyir (Survey Map : Likir), a village on the upper road from Leh, or rather from Bazgo, to Nyurla (Snurla) and Ka-la-tse (Khalsi). This name would suggest (as well as the name of Lama-yurru, Yurru being = Yung-dung = Svastika) that, as in Tibet so also in Ladakh, the Bon religion at one time was prevalent, of which the worship of the Lu (Nágas) and of the Yung-dung, and the idea of a Bon, *i. e.*, *summum bonum*, seems to have formed the most important elements. (This is borne out by the contents of a volume on the Bon religion, which was recently placed at my disposal).

<sup>33</sup> དཔལ་འབྱུང་གི་སྒྲུབ་ — but དཔལ་འབྱུང་ = Lamasery.

<sup>34</sup> ལྷ་ལྷ་པ་མཛད་པ་ 'those who exert themselves to obtain ལྷ་ལྷ་པ་' (Arhatship).'

<sup>35</sup> The maps know of two lakes only. But there is a possibility that the Kailása counts as one and, with the 2 lakes, makes up 3 separate places.

<sup>36</sup> Nyung-ti = Kullu, Capital : Sultánpur.

<sup>37</sup> *Viz.*, the Ma-p'am lake, the more easterly one of the two.

<sup>38</sup> Tib. དཔྱ་ in Jäschke's Dictionary, but the MSS. and Schl.'s ed. unanimously write ལྷ་

<sup>39</sup> Well-known cross-breed between yak and cow.



and iron, etc. This treaty remained in force till this day.<sup>40</sup> He also subjected Lo-wo,<sup>41</sup> (and the country) from Pu-rang downwards hither; in the south the country of De-shang to the place, where the water is fiery;<sup>42</sup> to the west, from Ra-gan-deng-shing (and) Stag-k'u-ts'ur<sup>43</sup> upwards hither; to the north, from Ka-shus<sup>43</sup> upwards. (They all) paid an annual tribute and attended the Darbár.<sup>44</sup>

His son was: (VII) LHA-CH'EN-NAG-LUG. This king built the palace<sup>45</sup> at Wan-la,<sup>46</sup> in the Tiger-year, K'a-la-tse<sup>47</sup> in the Dragon-year.

His sons were: (VIII) LHA-CH'EN-GE-BHE and Ge-bum.

His son was: (IX) LHA-CH'EN-JO-LDOR.

His son: (X) TA-SHIS-GON.

[His son: Lha-gyal.]<sup>48</sup>

This king caused a copy to be written of the Gyud-do-rje-tse-mo,<sup>49</sup> and of the Ngan-song-jong wai-gyud<sup>50</sup> and of the Gyud-bum,<sup>51</sup> all in gold.

His son was: (XI) LHA-CH'EN-JO-PAL. This king performed royal,

<sup>40</sup> Some twenty years ago the tax-collector of the king of Ladakh, still used to visit Lahoul and probably Kullu, although the two districts then already were under British rule.

<sup>41</sup> Not known.

<sup>42</sup> Not known, although people pretend to know well that a lake exists, called by them T'so Padma-chan, to which the passage is said to refer. It is supposed to be in British territory. The Sham-bha-la-pai Lam-yig contains the following passage: 'At the city of the king Da-ya-tse of Pu-rang, in consequence of water striking against coal, at night the coal is seen burning. It is said of this coal and water, that they have the peculiarity that the water, if introduced into the stomach of man or beast, turns into stone.' What to make of this, I cannot divine, but it seems certain that the phenomenon referred to here is the same as that alluded to in the passage.

<sup>43</sup> Not known.

<sup>44</sup> Tib. རྒྱུ་ལྷ་

<sup>45</sup> རྒྱུ་ལྷ་ usually translated by 'palace;' I feel inclined to prefer 'fort' or 'castle.'

<sup>46</sup> One march off the Kashmir road, near Ka-la-tse and Lama-yurru. (Survey Map: Wanbah.)

<sup>47</sup> At the bridge crossing the Indus (Kashmir road). Map of Turkistan and Survey: Khalchi; Drew: Khalsi.

<sup>48</sup> Mentioned in Schl.'s ed. only. Doubtful.

<sup>49</sup> 'Treatise of the Vajra-point.'

<sup>50</sup> 'Treatise on the Removal of Going to Perdition.'

<sup>51</sup> '100,000—Treatise.' With the two first-mentioned treatises I am not acquainted. The Gyud-bum consists of 12 vols. (in the ordinary printed edition), but I have also seen very fine written volumes, one, *e. g.*, on indigo-tinted paper with letters in gold. The contents seem to be disquisitions on the Mahāyāna philosophy.



as well as clerical duties (to such perfection) that he arrived at the end<sup>52</sup> (of his transmigrations).

His son was: (XII) LHA-CH'EN-NGOS-PUB. During the reign of this king the usage of novices going to Us-Tsang was first introduced. He also repaired the colleges that had been built by his ancestors; but more important than this: he laid down before the Prince of the Faith, the Lord of the three Worlds,<sup>53</sup> gold, silver, copper, coral-beads, pearls, etc., all (presents numbering) one hundred. He also caused to be copied<sup>54</sup> the Ka-gyur twice and the Sang-ngags-kyi-skyil-k'or<sup>55</sup> many times.

His son was: (XIII) LHA-CH'EN-GYAL-BU-RIN-CH'EN.

His son was: (XIV) LHA-CH'EN-SHES-RAB. As to the reign of this king: having built the hamlet Seng-ge-sgang on the top of the so-called Hang-tse-mo (rock), he made it a dependency of the Chang castle of Sa-bu<sup>56</sup> in Mar-yul.

His son was: (XV) LHA-CH'EN-T'İ-TSUG-LDE. This king built (one row of) ch'ortens (numbering) one hundred and eight<sup>57</sup> at Leh,<sup>53</sup> and two (rows of) 108 at Sa-bu.

His two sons were: (XVI) LHA-CH'EN-DAGS-BUM-LDE and Dags-pa-bum.

Dags-bum-lde held Leh etc. He erected, for the sake of his reputation with posterity,<sup>59</sup> the Red College<sup>60</sup> and a Buddha Maitreya, the

<sup>52</sup> I. e., 'as a transcendent virtue, Páramitá.' མཐའ་ཕྱི་ལ་ i. e., the ordinary ལ་འོ་ཏུ་ཕྱི་ལ་

<sup>53</sup> = Buddha, i. e., his image, probably the so-called Io-wo.

<sup>54</sup> བཞེད་པ་ most closely agrees with the German: 'stiften, stift, stiftung'; an exact equivalent in English I have not been able to discover.

<sup>55</sup> 'Wheel of Dháraní' ('secret spells'), a kind of book of which there exists a great variety.

<sup>56</sup> Village six miles SE. of Leh, off the main valley. (Survey Map: Sobu.) The Hang-tse-mo is a rock well known there. The castle is in ruins.

<sup>57</sup> 108, བརྒྱ་མ་ a sacred number. 108 is also the number of beads of the ordinary rosary of Lamaists, (for other examples see Sir Monier Williams' book on Buddhism, second edition, page 383). I find in G. H. Schubert's Sternkunde (1832) the observation, that in India 4,320 lunar years constituted one sacred period, the first of which terminated about the commencement of our era. It may be divided into 4 periods of 1080, equal to two Phoenix periods of 540 years.' As 108 is a constituent of all these figures, it may be supposed to be in some way connected with them. The rows of ch'ortens referred to here usually consist of ch'ortens not higher than 2 or 3 feet, and resemble low walls built at random anywhere across the desert.

<sup>58</sup> སྒྲུ་ sometimes སྒྲེ་ I adopt the usual spelling of the 'Postal Guide.'

<sup>59</sup> རྒྱ་མ་ཕྱུ་ཞེས་ཀྱི་ཕྱི་ལ་ = 'for the sake of his reputation with posterity,' German: 'Nachruhm.'

<sup>60</sup> Probably the one on the Nam-gyal-tse-mo at Leh.

Lord, in size (such as he will be) in his eightieth year.<sup>61</sup> On his right and left there were a Mañjuśrī and a Vajrapāni, each one story high. He caused to be painted all fresco pictures, representations of the departed Buddhas, of the preserver of the universe,<sup>62</sup> and of all his own private deities. He also built a triple temple (one surmounting the other) on the pattern of (the one at) T'o-ling.<sup>63</sup> As a symbol of the Word,<sup>64</sup> he caused a copy to be written of the Zungs-bum-ch'en-mo<sup>65</sup> and of the Kon-ch'og-tsegs-pa lang-kar shegs-pa<sup>66</sup> and some others. As a symbol of the Spirit: some fatality having occurred at Leh, he built over the Teu<sup>67</sup> ser-po ('Yellow Crag') completely, outside in the shape of a ch'orten, inside containing 108 temple-shrines. The ch'orten is called: Teu Ta-shis-od-t'o.<sup>68</sup> Again, in the lower part of the valley of Leh, there is a crag resembling an elephant. The king caused to settle down on this rock a brotherhood of four Lamas.<sup>69</sup> Having done all this, he said: 'If I die now, it matters not.'

<sup>61</sup> I. e., in a sitting posture about 20 or 25 feet high.

<sup>62</sup> Tib. འཛིན་པོ་བཟོན་པ་ལྷ་མོ་ probably Maitreya (?).

<sup>63</sup> Tib. མཐོ་ལྷིང་ pronounced To'-lding, on the Upper Sntlej. (Map of Turkistan: Totlingmat, 'mat'='the lower' i. e. lower part of the city.) The Sham-bha-la-pai Lam-yig contains a reference to this temple: "it had been built (A. D. 954 Schl.) by the Lo-tsa-wa Rin-zang-po. The Hor (Turks?) burnt it down, but at some later date it was rebuilt, and now, in its lowest compartment, it contains the 'Cycle of the Collection of Secrets'." Adolph von Schlagintweit visited it; see 'Results of a Scientific Mission.'

<sup>64</sup> སྐུ་གཡུང་གྲགས། = 'body, word and spirit,' or in common parlance: གུས་ངག་ཡིད། and mystically expressed by the formula འཛིན་པོ་བཟོན་པ་, have each their own special རྟེན་ or symbols; སྐུ་འཛིན་ 'the image,' གཡུང་གི་རྟེན་ 'the Scriptures'; གྲགས་ཀྱི་རྟེན་ 'the Ch'orten.' They represent a kind of triad, corresponding to the 'three Holies,' དཔེན་མཚན་གཡུམ་ i. e., the Buddha, the Law and the Order of Monks, (comp. Sir Monier Williams, p. 175.) But there may be, just as དཔེན་མཚན་གཡུམ་ is not without some underlying idea of a Supreme Being, ruling over all, some other more obscure and deeper meaning embodied in these symbols.

<sup>65</sup> 'The great 100,000 of Dhāraṇī.'

<sup>66</sup> 'How the three Holies came to Ceylon'—'tsegs-pa' (བསྐྱེད་པ་) i. e. probably གཡུམ་བསྐྱེད་པ་ 'threefold, triple, three one above the other.'

<sup>67</sup> Tibetan རྩ་ 'crag.'

<sup>68</sup> This ch'orten 'Brilliant good fortune,' still exists, though in a dilapidated condition, about two miles up the Leh valley from the British Joint-Commissioner's compound.

<sup>69</sup> Also still extant at the suburb of Leh called Ska-ra, near the Kil'a.

(At that time it came to pass that) the Omniscient of the period of degeneration, the great Tsong-k'a-pa, Lobzang Dags-pa,<sup>70</sup> having in his possession a T'se-pag-med<sup>71</sup> about as long as a finger joint, which had originated from the blood of his nose, entrusted the same to two ascetics, and said, 'Give it either to the one called Dags-pa or to the one called Lde.' When the two arrived in Mar-yul, the one called Dags-pa was in Nub-ra. They went into his presence, but he did not deign to look at them with so much as one eye. So they went on to Leh. On the morrow the king gave command: 'At to-day's Darbár, whosoever attends, be it ascetics, or Bhe-da,<sup>72</sup> or Mon,<sup>73</sup> or Ti-shi,<sup>74</sup> he should not be refused admittance.' Now when the two ascetics came into his presence, the king rose and went to meet the two ascetics. The two ascetics made over the present, and the king was delighted with it. Taking the precious law of Buddha for his pattern,<sup>75</sup> he built the Lamasery of Spe-t'ub,<sup>76</sup> though in reality he did not build it, but it came into existence by a miracle. Having built it, he caused many brotherhoods of Lamas to settle down (in the country).

His son was (XVII) Lo-pos-CH'OG-LDAN. As to the reign of this king: from Gu-ge were brought: 18 coats of mail,<sup>77</sup> the most excellent

<sup>70</sup> Lo-bzang (= pron. Lobzang) Dags-pa is Tsong-k'a-pa's spiritual name (comp. Koeppen II, p. 118).

<sup>71</sup> 'Time without measure,' 'Eternity,' an epithet of Gautama Buddha.

<sup>72</sup> Bhe-da: professional musicians of low caste, Muhammadans, of Balti extraction. They, as well as the other low caste inhabitants of Ladakh, now may possess fields and houses.

<sup>73</sup> Mon: joiners and carpenters by profession, also of low caste, though not quite so low as the Bhe-da. They probably are remnants of the tribes of aborigines, but at one time occupied the hill districts of the Himalayas. Though Buddhists, the zamíndárs keep apart from them, and any zamíndár who would marry a Mon-maiden would by doing so lose caste.

<sup>74</sup> Ti-shi: another low caste, shoemakers by profession. They also are Buddhists.

<sup>75</sup> This probably means: 'he adopted the reformed doctrines of Tsong-k'a-pa.' Tib.: དཔེ་བ་ Pf. དཔས་ 'to imitate.'

<sup>76</sup> Lamasery and village, on the river Indus, five miles south-west of Leh. The Lamas belong to the Ge-Idan-pa order of Lamas. The Lamasery has an incarnated Lama (Sku-shog: སྐུ་ཤོག་ B M S.). It is vulgarly called Spi-t'ug (Survey Map: Pittuk.) Other Lamaseries of the Ge-Idan-pa order in Ladakh are T'ik-se (Survey Map: Tikzay), Sang-kar (a Leh suburb), Li-kir, Ri-dzong and many small ones.

N B.—Although the 'Order' primarily refers to the Lamas, yet every family or house (ཁྲིའུ་པ་) in the country is affiliated since time immemorial to one or other of the Lamaseries, and hence is attached to the respective Order of Lamas as a kind of lay-dependency, and worships the same tutelary deity (ཡི་དམ་).

<sup>77</sup> Names given to weapons etc. are very common in Tibetan literature. They



of their number being the Mu-t'ab-zil-pa,<sup>78</sup> the Ma-moi-mun-Dib,<sup>79</sup> the T'ab-ch'ung ka-ru<sup>80</sup> (and) the Lha-t'ab-kar-po;<sup>81</sup> 18 swords, amongst them being the Nam-k'a-t'ag-ldag,<sup>82</sup> the Dong-tse-rings<sup>83</sup> (and) the Log-mar-me-sad;<sup>84</sup> 15 knives, whereof the best were: the Dud-qi-nag-po<sup>85</sup> (and) the Dam-di-zlung-gyad;<sup>86</sup> 15 turquois, the best of these were: the Lha-yu-od-ldan<sup>87</sup> (and) the Lha-yu-kar-po;<sup>88</sup> 20 saddles, amongst them the Ga-ma-ji-t'i-stengs<sup>89</sup> (and) the Ta-shis-od-ldan.<sup>90</sup> (Also) ponies (*viz.*), 50 gray ones, 50 isabel, 20 black, 30 piebald; also 20 young yak-cows and twenty light-brown yak-bulls, besides sheep, etc.; in short (they brought) tribute, revenue and presents in vast quantities. Having conquered Nga-ris-skor-sum as well, (his dominions) grew much in extent.

Lha-ch'en-dags-pa-bum had ruled over Rab-stan-lha-tse,<sup>91</sup> Te-ya,<sup>92</sup> etc. He built the royal city of Ting-gang.<sup>93</sup>

His son was: Lha-ch'en-bha-ra.

His son was: (XVIII) LHA-CH'EN-BHA-GAN. This king was very fond of fighting. He and the Shel<sup>94</sup> people having formed an alliance, they deposed and subjected the sons of the king of Leh, Dags-bum-lde, (*viz.*), Lo-dos-ch'og-ldan, Dzung-pa-a-li and Lab-stan-dár-gyas.

present a serious obstacle in reading, *e. g.*, the Ge-sar epic. Schl. also, in this passage, failed to recognize the fact that it chiefly consists of proper names. Coats of mail in Ladakh usually were either chain-armour or made of scales of metal. At P'i-yang (Survey Map: Phayang) Lamasery a collection of such armour is still shown to visitors.

78 'The resplendent Devil-Coat-of-mail.'

79 'Devil-Darkness.'

80 'The little Coat-of-mail Heavy-weight' (?).

81 'White Deva Coat-of-mail.'

82 'Licking blood off the sky.'

83 'Wild yak, long point.'

84 'Killer of the red Lightning-flame.'

85 'Black Devil-knife.'

86 'Knife of 5 marks (seals)' (?).

87 'Luminous Deva-Turquois.'

88 'White Deva-Turquois.'

89 'Raised Glory-throne Saddle' (?).

90 'Good Fortune, light emitting.'

91 Proper name of the palace of Basgo (S. m. Bazgo), now in ruins.

92 Near Nyur-la (S. m. Snurla), but off the main valley to the North. Survey

Map: Jeah.

93 Close to Je-ya; Survey Map: Jemesgam. It is, according to our ideas, a village. It is one of the prettiest villages in Ladakh.

94 Vulg. She, Survey map: Shay; village ten miles SSE of Leh, on the right bank of the Indus. It has a palace of the Ladakh Rájá (comp. B MS.)



His sons were: Lha-ch'en-lha-wang-nam-gyal<sup>95</sup> and (XIX) TA-SHIS-NAM-GYAL, (these) two.

Lha-wang-nam-gyal had great bodily strength and was clever at (any kind of) sport.<sup>96</sup> But Ta-shis-nam-gyal, the younger (of the two), being very crafty, caused the prince's eyes to be plucked out. Still, lest the dynasty should die out, he gave him a wife and allowed him to stay at Ling-snyed.<sup>97</sup> His sons<sup>98</sup> were: Lha-ch'en-ts'e-wang-nam-gyal, Nam-gyal-gon-po, and Jam-yang-nam-gyal, (these) three were born. These three sons grew very tall in stature, they grew taller within a month, than what others grow in a year, and they grew taller within a day, than what others grow within a month.

At that time the king Ta-shis-nam-gyal reigned. This king conquered (all the country) from Pu-rig<sup>99</sup> upwards and from Do-shod<sup>100</sup> downwards hither. He brought (home) herds of ponies in inconceivable numbers. He built the fort on the Nam-gyal-tse-mo<sup>101</sup> of Leh and founded the hamlet of Ch'u-bhi.<sup>102</sup> He fought against an invading force of Turks, and killed many Turks. He erected a temple (dedicated) to the (four) Lords<sup>103</sup> on the Nam-gyal-tse-mo and laid the corpses of the Turks

<sup>95</sup> Nam-gyal, རྩམ་ཐྱུག་ and རྩམ་པར་ཐྱུག་པ་ 'the quite victorious' here occurs for the first time as part of a name of a member of the royal family. It seems to designate the new dynasty and remains in use to this day.

<sup>96</sup> Tibetan རྩུ་རྩུ་

<sup>97</sup> Ling-shed (Survey Map: Linshot) in Zangs-kar, four marches south of Kala-tse.

<sup>98</sup> The sons of Lha-wang-nam-gyal, that is, of Ta-shis-nam-gyal, had no children. They were brought to Leh, where they received their education (Ta-shis-shan-p'el).

<sup>99</sup> District crossed by the Kashmir road from the Zoji-la to the Po-to-la. Capitals: Kargil (Thanadár) and Kartse. The inhabitants are partly Buddhists, partly Shiah Muhammadans. They are a race distinct from either Baltís and Ladakhís. They wear an upper garment of a dark-brown colour—by which they may be distinguished from Ladakhís—and a small round skull-cap. The long locks of hair on the temples, in fashion with Baltís, are not seen with Pu-rig men. They all but monopolize the carrying-trade between Ladakh and Kashmir, ponies—though not a very good breed—being their chief wealth.

<sup>100</sup> Name of a district about the 25th stage from here to Lhasa between Maryum La and Chachu Sangpo (Map of Turkistan).

<sup>101</sup> The 'Palace' occupies the very summit of the precipitous rock (Nam-gyal-tse-mo) at the foot of which the city of Leh is built. The 'Leh palace' is at a lower level. Now some religious buildings only remain, the fort itself being in ruins.

<sup>102</sup> Chu-bi: about a dozen of houses at the foot of the western declivity of the Nam-gyal-tse-mo. The road to the top passes through it. (Survey Map: Chubbee.)

<sup>103</sup> *I. e.*, 'the four Great Kings (Máharájas),' the Guardians of Buddhism (comp. Sir Monier Williams, p. 206.) The temple and images still remain (information by Ta-shis-stan-p'el).—As to 'Turks': རྩུ་རྩུ་ in Central Tibet means 'Mongols,' in

under the feet of (the images of) the (four) Lords. Again, by building the temple to the (four) Lords he obtained power over the demon that turns back hostile armies.<sup>104</sup> He invited the veritable Buddha whose name was Ch'os-je Ldan-ma from Di-k'ung (Lamasery)<sup>105</sup>, and then built the Lamasery called Gang-ngon-ta-shis-ch'os-dzong.<sup>106</sup> He made the rule regarding the number of children that were to be sent by every village to become Lamas,<sup>107</sup> and introduced the doctrine of the Dūbyud.<sup>108</sup> At the spot, where the Lamasery is seen (for the first time),

Ladakh, Turks of Central Asia. I am informed, however, that here exists a people in Tibet itself, somewhere between Ladakh and Lhasa, and occupying a considerable tract of country, called by the same name.

<sup>104</sup> This sentence occurs in B MS. only, where there is མིང་མགན་ i. e., མི་མགན་ (see Jäschke, Dict.). I am not quite confident as to the correctness of my translation here, but if མཐུང་དམག means 'the hostile army,' and not the army of the country 'operating at the frontier' I think it could not be rendered differently.

<sup>105</sup> It gives its name to a special Order of Lamas of the 'red' persuasion. (Koepen II, 78.—Schl.'s information—Buddhism in Tibet, p. 74,—as to this sect is incorrect.) The head of the lamasery of Di-k'ung is a Ch'os-je.

<sup>106</sup> Proper name of the lamasery at P'i-yang ('ཕྱི་པང་') eight miles west of Leh, vulgarly called Sgaugon Gon-pa.

<sup>107</sup> Tib. བརྩོན་ལུག་ 'tax of children to be made Lamas.'—Under the old régime every family of more than one or two male children, had to give up one, not the eldest however, to be made Lama. Now, of course, this tax is no longer compulsory, and hence the great falling off in the number of Lamas. The Lama-child བརྩོན་རྒྱུད་ Tsun-ch'ung stays at home until his 8th year, wearing the red garment and red or yellow cap from the first. Then he goes to a lamasery, or is apprenticed to a Lama, in order to receive his primary education, until he reaches his 14th or 15th year, being all this time called བརྩོན་རྒྱུད་ Tsun-ch'ung. Then he goes to Lhasa, where his studies get their finishing touch. After a sojourn there of one or two years or longer,—now under the name of དགེ་རྒྱུད་ Ge-ts'ul—on passing an examination conducted by the Head Lama of the respective lamasery, he is baptized and thereby made a Ge-long (དགེ་ལྷོང་) Then he usually returns to his own country in order to perform there the functions of a village priest or to enter one of the Lamaseries, where special duties await him.

N. B.—There is an error prevalent regarding the dress of Lamas, which is propagated even by Sir Monier Williams in his recent book on Buddhism, viz., that the dress of Lamas of the 'red' persuasion is red, that of the 'yellow' persuasion, yellow. This is not so. The dress of both the 'red' and 'yellow' Lamas is red (with the exception of one special order of Lamas belonging to the Ge-ldan-pa, who, to my knowledge, only exist in Zangs-kar, whose dress also is yellow); but Lamas of the 'red' persuasion also wear caps and scarfs round their waist red, whilst in case of the 'yellow' Lamas these and these only are yellow.

<sup>108</sup> 'Treatise on Esoteric Doctrine.'

he suspended a long prayer-flag. Whosoever, whether thief or liar, in short, any one guilty of offence against the king's palace or life,<sup>109</sup> if he escaped to this spot, should be rid of his crime. Again, he presented to the Di-k'ung, Sa-skyā,<sup>110</sup> Ge-ldan, Lha-sa (and) Sam-yas<sup>111</sup> (lamaseries) cushions, gold-water, long prayer-flags, (tea for) tea generals,<sup>112</sup> (all) an hundred-wise, etc. He also caused a Ka-gyur and Stanggyur to be copied besides many other (religious) books and erected many ch'ortens.

(He was succeeded by) the incarnate<sup>113</sup> king (XX), T'sE-WANG-NAM-GYAL (who) was invited to assume the royal functions. He, when quite a young man yet, already went to war. He conquered (all the country) from Ngam-ring<sup>114</sup> in the east downwards hither, (*viz.*,) Lo-wo, Pu-rang, Gu-ge, etc.; to the south (his conquests were) Dzum-lang<sup>115</sup> and Nyung-ti;<sup>116</sup> in the west (they included) Shi-kar<sup>117</sup> and K'a-(s)kar<sup>118</sup>. He also said, he would make war against the Turks north (of Ladakh), but the people of Nub-ra<sup>119</sup> petitioned him and he desisted. He brought the

<sup>109</sup> *I. e.*, *crimen læsæ majestatis*, though in a wider sense than usually accepted.

<sup>110</sup> Sa-skyā, lamasery of 'red' Lamas. (Sir Monier Williams, p. 448.) It gives its name to the Sa-skyā-pa Order. This Order is represented in Ladakh by the Masho Lamasery (South of the Indus, near He-mi).

<sup>111</sup> Ge-ldan, Lha-sa and Sam-yas are lamaseries at or near Lhasa, belonging to the 'yellow' persuasion. As to Ge-ldan or Ga-ldan see Sir Monier Williams, l. c., p. 441.—Lha-sa = La-dang (ལ་དང་) + Te-wa-shung (ཐེ་བ་ཤུང་ or བདེ་བ་ཤུང་) + Jo-k'ang (ཇོ་ཁང་ = house of the Jo-wo). See Sir Monier Williams, l. c., p. 440.—Sam-yas: *id.*, p. 448.

<sup>112</sup> Gold-water,—*i. e.*, gold finely divided by prolonged trituration, suspended in water, extensively used for gold-washing the images. 'Tea generals,' see *id.*, p. 330.

<sup>113</sup> He is supposed to have been an incarnation of Ch'ag-na-do-ye (Vajra-pāṇi).

<sup>114</sup> Ngam-ring: on the road from Lhasa to Ladakh, 21 marches this side of Lhasa. It is likely, that the three districts Lo-wo, Pu-rang and Gu-ge here are enumerated in succession, as they follow each other from east to west. Hence it would appear, that Lo-wo is the most easterly part of Nga-ris-skor-sum.

<sup>115</sup> Dzum-lang, not known. May be identical with Jumla (Map of Turkistan) in Nepal.

<sup>116</sup> Comp. note 36.

<sup>117</sup> = Shi-gar, large village in Baltistán. (See Drew, Northern Barrier, p. 210).

<sup>118</sup> K'a-(s)kar (Tib. ཁ་དགཀར་ — ད་ preceding ཁ་ in Ladakh is frequently pronounced like s) may be Skardo. There certainly is a Kashkar (Chitral) further west, but it is very improbable, that the Ladakh empire ever should have extended so far.

<sup>119</sup> Trade with Chinese Turkistán is almost essential to the welfare of Nub-ra. It is in Nub-ra, that all the caravans going to, or coming from, Yarkand obtain their supplies for man and beast. Consequently most grown-up people in Nub-ra know the Turkí language fairly well.



rulers of all these (districts with him) as hostages<sup>120</sup> and placed his own representatives into (their) castles. All Mar-yul grew much in extent. Gu-ge had to pay as tribute and dues annually 300 zho<sup>121</sup> of gold, Ru-t'og 260 zho of gold in addition to 100 three years' sheep, one riding-horse, 10 tanned skin-bags, and (the proceeds from the royal domains) of K'ar-o-ldong and Zhing-dar-ch'en-dar-ch'ung,<sup>122</sup> (indeed) from all sides they brought in tribute and dues in inconceivable quantities.

The king then came to consider: 'My ancestors have, on the pattern of the T'o-lings of Lha-sa and Gu-ge, placed the bones of the Buddha-Elephant<sup>123</sup> on the Tse-mo,<sup>124</sup> but as the people do not go there on pilgrimage, or in order to worship, or to offer up sacrifices, or perform circumambulations, I will, instead, build a college and (in fact) establish the doctrine of Buddha on a basis similar to what it was under my ancestor Ral-pa-chan.<sup>125</sup> But as his work on earth<sup>126</sup> was finished, he died.

Upon this all the vassal-princes lifted up their heads. (XXI) JAM-YANG-NAM-GYAL reigned. As to the reign of this king: two chiefs in Pu-rig did not agree. He came with the Ladakh army to the assistance of one of them, called Ts'e-ring-ma-lig. But the time had now come, when the period of darkness should supervene, the period when royal supremacy should well nigh be destroyed. The army of 'Alí Mir, captain of the forces of Nang-gong<sup>127</sup>, broke forth. They met, and by dint of

<sup>120</sup> བཞེ་པ་ (Jäschke, Dict.); the MSS., however, are unanimous in writing བླ་པ་; pronunciation also: Ste-pa.

<sup>121</sup> 1 zho of gold is stated to weigh  $\frac{1}{4}$  tolah, equivalent to almost 3 grammes. Its value in silver is said to correspond to about 15 to 18 Rupees. This would agree with the British guinea.—1 zho of gold is a price charged, *e. g.*, for large printed volumes like the Do-mang, which may be had at Leh Lamasery, printed to order for this price.

<sup>122</sup> K'ar-o-ldong and Zhing-dar-ch'en-dar-ch'ung are said to be the names of two estates near Ru-t'og (?).

<sup>123</sup> Gautama Buddha in one of his births figures as an elephant. His bones are supposed to be the relics referred to in this passage. They were destroyed by the Baltís at the time of Jam-yang-n-gy. (Communication by Ta-shis-stan-p'el.)

<sup>124</sup> Nam-gyal-tse-mo, compare notes 100 and 101.

<sup>125</sup> Name of one of the ancient kings of Tibet. His proper name was: T'i-lde-shong-tsan. His obsequiousness to the clergy rendered him odious to the people and noblemen, and prepared the way for Lang-dar-ma, the apostate and suppressor of Buddhism. He was murdered about 840 A. D., (compare Koeppen II. 72. The Gyalr. s. m., in the last chapter of the book, contains a very full account of the story. Compare also Schl.'s ed., page 206 and his translation, page 57.)

<sup>126</sup> ལྔམས་འཛུལ་ལས་ It would seem far-fetched to explain this by: 'the work (karma) of a prior existence in their effects being exhausted' as suggested by Schl.

<sup>127</sup> Nang-gong = 'central and upper *i. e.* districts' viz., of Baltistán. C MS. replaces this term by 'Skardo.'



strategem, (ever) putting off (fighting) from one day to the next,<sup>128</sup> (he succeeded in holding them on), until all the passes and valleys were blocked with snow, and the king with his army, wherever they went, were compelled to surrender.<sup>129</sup> All Ladakh was (soon) overrun by Baltís, who burnt all the religious books with fire, threw others into the water, destroyed all the colleges, whereupon they again returned to their own country.

After this (it pleased) 'Alí Mír Sher Khán to give his daughter, Gyal-k'a-t'un<sup>130</sup> by name, who was an incarnation of the white Dol-ma,<sup>131</sup> to Jam-yang-nam-gyal to be his wife. After he had sojourned there for a little while, (it happened, that) 'Alí Mír (had a dream. He) dreamt he saw emerging from the river below his castle a lion, which jumped<sup>132</sup> and disappeared into (the body of) Gyal-k'a-t'un. It was at the identical time, that Gyal-k'a-t'un conceived. Now after 'Alí Mír had prepared a feast for all the soldiers, and Gyal-k'a-t'un had put on all her jewels, he invited Jam-yang-nam-gyal to mount the throne and then said: 'Yesterday I dreamt I saw a lion (emerging) from the river in front (of the palace) and jumping at Gyal-k'a-t'un, he disappeared into her body. At the very same time also Gyal-k'a-t'un conceived. Now it is certain, she will give birth to a male child, whose name ye shall call Senge-nam-gyal.' Having said this, he gave (the king) leave with the army of Ladakh to return home and to resume his royal functions.

She bore him two sons: Senge-nam-gyal and Nor-bu-nam-gyal, (these) two.

At that time Jam-yang-nam-gyal bethought himself: 'In the first instance, I went with my army to the assistance of T'se-ring-ma-lig of Pu-rig; the consequence was, that all Ladakh was laid waste. Now I will employ any means that may serve towards the propagation of the religion of Buddha, and make it spread. But as the religion of Buddha for its propagation is entirely dependent upon the people, I will, on my part, relieve them from all taxation, and treat them like my own children.' (Having thus resolved,) he equalized rich and poor three times

<sup>128</sup> Tib. རྒྱུ་མི་ཐོག་ཅི་ཡི་ཤི་ཅི་ཡི་ཤི་ 'what day do you think, (we shall fight)?' རྒྱུ་མི་ 'it is likely' (Jäschke, Dict.).

<sup>129</sup> Tib. ཡུ་ལུ་ 'succumbed, lost, waned.'

<sup>130</sup> ལྷ་ལྷོ་ལྷོ་ according to Schlagintweit, a Tatar word, meaning 'Lady of noble birth.' (See his translation, p. 75, note 1.)

<sup>131</sup> For Dol-ma kar-mo, ལྷོ་ལྷོ་མ་དཀར་མོ་ mong-Tsaghan Dára-Eke, see Koeppen II, 65.

<sup>132</sup> Tib. རྒྱུ་མི་ 'a leap, bound.'

This king united under his sway (all the country) from Pu-rig upwards, and from Dang-tse<sup>133</sup> downwards hither.

Ts'e-ring-gyal-mo, the daughter of Jig-sten-wang-ch'ug, whom he had married before he took Gyal-k'a-t'un,<sup>134</sup> also bore him two sons: Ngag-wang-nam-gyal and Stan-dzin-nam-gyal. These two sons were sent to Us-tsang in order to (lay down) before the precious Jo-wo:<sup>135</sup> gold-water and cushions; at Das-spungs<sup>136</sup> (and) Ra-lung:<sup>137</sup> gold, silver, pearls, coral-beads, amber, trident-banners,<sup>138</sup> (tea for) tea generals, all numbering one hundred; at De-nam:<sup>139</sup> long prayer-flags,—and (to act) as messengers to the Dug-pa Incarnation,<sup>140</sup> whom they were to invite (to Ladakh).

For the sake of his reputation with posterity,<sup>141</sup> he caused a copy of

<sup>133</sup> Dang-tse (Survey Map: Jankse), well-known village, east of Leh, on the road to the Pang-kong lake and Jang-ch'en-mo. The limits given here include less territory than there had been under the kings of Ladakh at any other time.

<sup>134</sup> Although polygamy is not common with Ladakhis,—polyandry being more in vogue—yet no one objects, if a man, in case his first wife has no children, takes a second wife. The first wife is then called 'chan-ch'en,' the second wife 'chan-ch'ung;' chan ma is said to mean: 'a woman who prepares the food;' the spelling of the word is uncertain.

<sup>135</sup> Jo-wo: I am informed, there are really three images called by this name, two of them, the best known of all, are the Jo-wo Rin-po-ch'e and Jo-wo mi-skyod-do-rje, both in the Jo-k'ang at Lhasa, one on a lower, the other on an upper platform; the third, Jo-wo Shákya-mu-ne is the one at Ra-mo-ch'e. The Jo-wo mi-skyod-do-rje was brought by the queen T'i'-btsun (ཐི་བཙུན་) from Nepal (s. Gyalr. s. m., chapter 12), the Jo-wo Shákya-mu-ne, on the other hand, by the queen Kong-jo (ཀོང་ཇོ་ which has nothing to do with Kon-ch'og) from China (s. Gyalr. s. m., chapter 13). Where the Jo-wo rin-po-ch'e has come from, I do not know.

<sup>136</sup> A Ge-Idan-pa-lamasery (see Sir Monier Williams, l. c., p. 442).

<sup>137</sup> Also written ལྷ་ཡུང་ and once འབྲུག་པ་ཡུང་ an important Lamasery of the Dug-pa Order, near Lhasa.

<sup>138</sup> A long tuft of silk threads, suspended from a trident (K'a-tam-k'a or t'se-sum) and supported on a pole. It may be carried about or placed on the roof of Lamaseries and palaces. Its Tibetan, name is ཇམ་དར་ not ཇམ་དར་ (Chab-dar, not Chob-dar).

<sup>139</sup> Lamasery (Ge-Idan-pa), two or three days' journey west of Lhasa.

<sup>140</sup> Probably an incarnation of Pal-je-shes-gon-po (པལ་ཇེ་ཤེས་གོང་པོ་) the tutelary deity (ཡི་དམ་) of the Dug-pas.

<sup>141</sup> Tib. ཐུ་མའ་ = ཐུ་མ་ལྷ་མཁའ་ལྷ་

the Gya-tog-ser-sum<sup>142</sup> and of the Kar-gyud-ser-ṭ'eng<sup>143</sup>, in addition (to other books), to be written in gold, silver, and copper. (Likewise) for the sake of posthumous fame, he would have very much liked to rebuild and present anew<sup>144</sup> whatsoever had been destroyed by the Baltís, but his life being short, he died (before he had been able to accomplish his purpose).

His son was the king of the Faith (XXII) SENGE-NAM-GYAL.

From his childhood he was very strong and clever at wrestling, running, jumping, shooting with (bow and) arrow as well as matchlock,<sup>145</sup> and riding. In any kind of sport he was to be compared with Siddhartha the son of Suddhodana of olden time.

The king, when yet a youth, made war against the back-steppes of Gu-ge. He carried away ponies, yaks, goats and sheep even so far as from the northern slopes of the Kailása, and (indeed) from everywhere on earth. Some time later he made war against the central provinces of Gu-ge also. Sha-wang and Zha-ye he allowed to be killed,<sup>146</sup> and he made all Ladakh to be full of yaks and sheep. He married the Ru-shod princess<sup>147</sup> Skal-zang-gyal-mo. He invited the king of Saints,<sup>148</sup>

<sup>142</sup> ཐུ་ཏོག་གསེར་གཟུང་ is a religious 'Trilogy' consisting of the ཐུ་བློང་ the ཏོག་གཟུང་ and the གསེར་འོད་. Frequently the last-named title is applied to the whole, viz., Ser-od. (See Jäschke's Dict., 'S. O.'). The Tog-zungs is in my possession but as yet remains unexamined.—Although 'Trilogy' is a term applied to dramatic productions only, yet considering that tripartite religious books are frequently met with in Tibetan literature, I think the term may be found useful.

<sup>143</sup> Ta-shis-stan-p'el,—late Head-Lama of Stag-na Lamasery in Ladakh, and probably the most learned Lama in the country—informed me, that this is a kind of clerical genealogy, or a list containing the names of the chief Lamas of his own order, the Kar-gyud-pa, from its very commencement. The Kar-gyud-pa, who are supposed to derive their name from this genealogy (Kar-gyud, དཀར་རྩུང་) are a subdivision of the Dug-pa order.

<sup>144</sup> Tib. མཛུ་བཞེད་བ་ for 'rebuild and present anew.'

<sup>145</sup> Tib. མྱེ་ག་ (i. e., མྱེ་ག་ reading) = firearms.

<sup>146</sup> As to Sha-wang and Zha-ye no information was available. Ta-shis-stan-p'el, however, was confident, that མར་ཐག་ལ་གཏེད་བ་ means 'to kill.'

<sup>147</sup> Ru-shod, རུ་ཤོད་ an upland district (about 15,000 elevation) between Ladakh and Lahoul and Spiti, usually called Rupshu (Drew) or Rukshu (Survey Map). The present 'queen' of Ladakh is also a Rupshu-'princess.'

<sup>148</sup> ལྷ་པ་ཏེ་བ་ 'Sidha,' according to Sir Monier Williams (p. 536) seems to denote the degree next to, and below Arhatship. This passage, however, properly refers to Jainism. The word occurs again in the text 4 lines further down, where the eighty



called Stag-ts'ang-ras-ch'en (to Ladakh). This Buddha,<sup>149</sup> who had obtained the rainbow-body,<sup>150</sup> had visited Hindústán, Orgyan,<sup>151</sup> Kashmír, etc., and had seen all the eighty saints<sup>152</sup> face to face. In memory<sup>153</sup> of his father, he erected at Bab-go<sup>154</sup> an (image of) Maitreya, made of copper

ཐུབ་ཐོབ་ (Dub-t'ob) are mentioned. The only 'eighty' referred to anywhere in Buddhistic literature, are, I believe, the eighty 'Great Disciples, Maháśrávakas' (M. W.) They, indeed, were not supposed to have attained to Arhatship during life, but became Arhats at the moment of their death. Hence the ཐུབ་ཐོབ་ or Siddha would seem to be a 'candidate for Arhatship,' one who 'will obtain ཐུབ་པ་ i. e., perfection' when he dies. Two characteristics of the Dub-t'ob, incidentally mentioned here, also prove that between him and an Arhat-designate is very little difference. The first is, that he is able to have intercourse with the eighty 'Great Disciples,' i. e., that 'time' to him is of no account. The second is: that he had obtained the 'Rainbow-Body,' རཐུ་ལུས་ i. e., 'a body, which (at death) vanishes out of sight, not leaving any trace behind, just like the rainbow.' Compare the Ladakh-Gyalrabs (MS. in my possession, p. 67, and Schl's. 'Könige von Tibet', Tib. text, p. 14a) where there occurs a passage referring to the death of the seven ཁྱི་ (T'i = 'throne') kings of Tibet: 'they died ལྷ་ལུས་རྩི་མེད་རཐུ་ལུས་ལྷ་འཕམ་—Schl. ལྷ་ལུས་ is an error in writing—and their Deva-body disappeared like the rainbow, leaving no trace behind.' This, of course, amounts to obtaining Parinirváṇa. Now as according to Sir Monier Williams the third and highest degree of Arhatship is identical with Supreme Buddhahood, it is no longer difficult to understand, how the two characteristics referred to apply to the ཐུབ་ཐོབ་ nor why Stag-ts'ang should be styled in the same passage a བདེན་ཐུས་ i. e., a Buddha.—Stag-ts'ang is said to be the author of the small book of travel, the ཤམ་བླ་པ་པོ་ལའ་ལམ་ཡིག་ 'Sham-bha-la-pai Lam-yig,' referred to once or twice in these notes.

<sup>149</sup> Tib. བདེན་ཐུས་ Comp. in German the words: 'der Verklärte, Verklärung.

<sup>150</sup> See note 148.

<sup>151</sup> Sometimes Orgyan = Udyána.

<sup>152</sup> See 148.

<sup>153</sup> Tib. དཔེ་མེད་ཐོབ་ཐོབ་ really has a much more profound meaning than simply 'in memory.' I think, its primary meaning is: 'to complete, what may be supposed to have been the intention of the deceased person to do, but was left undone'; a secondary meaning would be: 'to perform meritorious works on behalf of the deceased person, so as to benefit him or her in the Bar-do purgatory,' and thirdly (once in C MS., distinctly so): 'funeral rites and prayers read for the benefit of the soul.'—(The litany used on such occasions is called, in the case of the Ge-ldan-pa, སྤུང་ལམ་ 'the way of removing obstacles, viz., in the road to a happy rebirth,' and is usually read for 49 days, (as Sir Monier Williams gives it).

<sup>154</sup> Village on the river Indus, about fifteen miles west of Leh. (Survey Maps Bazgo.) The temple and image still remain, whilst the palace is in ruins. The place is well worth a visit.



and gilt, in size (such as he will be) in his eightieth year, and adorned with all kinds of precious stones. He introduced the great deities<sup>155</sup> of all Hindústán, east and west, and caused a copy of the Jams-ch'os,<sup>156</sup> five divisions and five volumes, to be written. He appointed for the duration of the (present) Skal-pa five Lamas to be in perpetual attendance and to offer up sacrifices and keep the sacred lamps burning both day and night. He put up sashes made of the most wonderful Chinese silks, (and also) umbrellas,<sup>157</sup> long prayer-flags, etc.

Again, in memory<sup>158</sup> of his mother, he sent to be laid down at the feet of the incarnation of P'ags-pa Rab-jor,<sup>159</sup> the Pañ-ch'en,<sup>160</sup> the Banner (lit. umbrella) of the Faith: golden earrings,<sup>161</sup> silver earrings, amber (pieces of) the size of apples 108,<sup>162</sup> smaller ones 108, coral-beads of the size of fowl's eggs 108, pearls of the size of Chinese peas 108 and smaller ones a great many. At ...<sup>163</sup> Lha-sa,<sup>164</sup> Ta-t'ug<sup>165</sup> and Sam-yas he offered up sacrifices, everywhere one thousand. To the Ge(-ldan), Das(-spungs), Se-ra, Dug-Ra-lung, Sa-skya and all the other Lamaseries, both great and small, he made presents of (tea for) tea generals and other things, all numbering one hundred, in plenty.

To the Saint stag-ts'ang-ras-ch'en, the same (as mentioned above),

<sup>155</sup> Tib. རྩེ་ལྷ་ I follow, in my translation, Ta-shis-stan-p'el's explanation, but still some misgivings as to its accuracy remain.

<sup>156</sup> = 'Maitreya religion.' I have not been able to obtain information regarding it.

<sup>157</sup> Tib. རྩེ་མཚོན་ a crinoline-shaped kind of thing, but cylindrical, not conical, in form, about 3 feet in height by 1 foot in width; it consists of 2 or 3 hoops with a covering of black woollen threads or of trimmings of calico. It is planted on the roofs of lamaseries and palaces. Jäschke (Dict. 'trophy,') apparently did not recognize the umbrella.

<sup>158</sup> See note 153.

<sup>159</sup> Subhúti.

<sup>160</sup> The Pañ-ch'en rin-po-ch'e at Ta-shis-lhun-po. He is not usually supposed to be an incarnation of Subhúti, but as he may be an incarnation of Amitábha, of Mañjuśrī, of Vajra-páni and of Tsong-k'a-pa, there is no reason why he should not be an incarnation of Subhúti as well. (Comp. Koeppen II, 127.—For Subhúti: Koeppen I, 104, 600 and the recent publication of the Asiatic Society of Bengal: the 'Sher-Phyin.'—)

<sup>161</sup> Tib. འབྲུམ་རྩིན་ large earrings of silver or gold, consisting of a ring about two inches in diameter, on to which are strung, like beads, a large number of very diminutive rings of silver or gold.

<sup>162</sup> Comp. note 57.

<sup>163</sup> Possibly one name wanting.

<sup>164</sup> Comp. note 111.

<sup>165</sup> Lamasery at Lha-sa (Ge-lan-pa).

he gave, in the several districts that belonged to himself, estates<sup>166</sup> as well as sites for religious buildings,<sup>167</sup> and Stag-ts'ang-ras-ch'en, during the reigns of both the father Senge-nam-gyal and the son De-ldan nam-gyal, the father then being in his decline and the son in his prime of life,<sup>168</sup> satisfactorily completed the Lamaseries at Wamle, Ta-shis-gang,<sup>169</sup> He-mi,<sup>170</sup> T'eg-ch'og,<sup>171</sup> etc. Thus the Law of Buddha made good progress. He governed over all his dominions according to the rule of the ten virtues,<sup>172</sup> and thus (it came to pass) concerning the kingdom of this world, that the king was like the lion and the Lama like the tiger,<sup>173</sup> and their (united) fame encompassed the face of the earth as 'the lord and the Lama,<sup>174</sup> sun and moon, a pair.'

After this, Senge-nam-gyal bethought himself: '(My) uncle Ts'e-wang-nam-gyal (certainly) did rule (over all the country) as far as Ngam-rings in the east (north), but he did not live long, and during the reign of (my) father Jam-yang-nam-gyal all the vassal-princes again rose (and made themselves independent).'<sup>175</sup> So he again went to

166 Tib. སྔ་ཡུན་ 'a first offering, earnest of land.'

167 Tib. མཆོད་འཁོལ་ 'offering site.'

168 Tib. ཆོ་མཐུང་ 'decline of life,' ཆོ་ཕྱོད་ 'prime of life.' This remark shows, —supposing General A. Cunningham's dates to be correct,—that Schlagintweit's first calculation (in 'Buddhism in Tibet,' 1863) has probably more to commend it, than the second one in 'Könige von Tibet,' 1866.—In the former work he finds the dates 1644 as the date of the foundation of the He-mi lamasery, 1672 as the date of the completion. In the latter, on the other hand, he gives 1604 as the date of the foundation (under Jam-yang-nam-gyal), completion at 1644.—*Primâ facie*, it seems very improbable that Jam-yang-nam-gyal should have ventured upon building enterprises on such a large scale, after the country had just recently been devastated by a ruthless foe.

169 In Tibet about two marches from the frontier, on the river Indus. Map of Turkistan: Tashigong.

170 Famous lamasery in Ladakh (Survey Map: Himis), about 18 miles SSE of Leh. The 'Himis-fair' in summer is the chief attraction to sight-seers in Ladakh. This lamasery is at present still the greatest land-owner in Ladakh, and its steward one of the most influential persons in the country. The Lamas are of the Dug-po order of the 'red' persuasion.

171 Sister-lamasery to He-mi, north of the Indus, in a valley which opens out opposite Hemi. Che-de, vulg. Chem-re (Survey Map: Chim-ray) is the name of the village, to which the lamasery belongs.

172 See Sir Monier Williams, l. c., p. 128.

173 Allusion to their proper names: Senge = lion, Stag = tiger.

174 Tib. མཆོད་ཡོན་ — མཆོད་ = Lama. ཡོན་ 'dispenser of alms' (Jäschke, Dict.) i. e., = Anglo-Saxon: hláford = Lord.

175 The Tibetan text of this passage is not very clear.

war (and came) as far as Ngam-rings.<sup>176</sup> At Shi-ri-kar-mo<sup>177</sup> (his army) was routed. Upon this, there arrived an ambassador from Tibet, and (it was agreed that) the frontier should remain as before, and that his dominions should include all the country up to Us-tsang. On his return journey he died at Wam-le.

Additions from C MS.

At Wam-le, God-yul, K'a-nag, Tsang-mar, Skyu-mar-nang, Me-ru, Dar-tse<sup>178</sup> the people, and elsewhere in Upper and Lower Ladakh throughout his dominions he (himself) gave to him for the duration of the present skalpa, sites for religious purposes and estates. The great saint Stag-ts'ang-ras-ch'en built not only the He-mi<sup>179</sup> (Jang-ch'ub-sam-ling<sup>180</sup>), Che-de (T'eg-ch'og<sup>180</sup>), Wam-le (De-ch'en<sup>180</sup>), Ta-shis-gang and other Lamaseries, but also raised images and ch'ortens of gold, silver and copper. He made the clergy very great.

In memory of his late father Jam-yang-nam-gyal, the king Senge-nam-gyal erected at Bab-go an image of the Buddha Maitreya, made of copper and gilt, three stories high, and adorned it with precious stones, turquois, coral beads, etc. To the Pañ-ch'en-rin-po-ch'e in Us (-Tsang) he sent a present of gold and silver a large quantity, and pearls of the size of Chinese peas 108, coral-beads of the size of fowl's eggs 108, amber, pieces of the size of apples 108, and other things.

To the great saint, Stag-ts'ang-ras-ch'en, the Supreme, he presented 100 ponies, 100 yaks, 100 cattle, 1,000 sheep, 1,000 goats, 1,000 (Ladakh) Rupees,<sup>181</sup> 100 zho gold, 3,000 loads of grain, one string of pearls, one string of coral beads, one string of turquois, 25 matchlocks,

<sup>176</sup> Comp. note 114. It is probably the རྩ་ has come to be a component part of the name, hence: Iang-ngam<sup>2</sup>.

<sup>177</sup> Name of a small lamasery on a rock on the right bank of the river Charta Sangpo (map of Turkistán) 29° 30' N., 84° 50' E. of Greenwich. The difficulty of crossing the river may to some extent account for the defeat of the Ladakh army. (Comp. Koeppen II, 146 and note 1.)

<sup>178</sup> Of these names God-yul is the name of the Han-le district. K'a-nag (Drew's map: Kharnak, Survey map: Khanuk; vulg., K'ar-nak), a valley in Zangs-kar. Tsang: abridged from Tsang-k'a, a hamlet near He-mi. Mar: abridged from Martse-lang (Drew: Marchalong, Survey map: Marsahing), near He-mi. Of the combination Skyu-mar-nang: Skyu = Skew or Skio (Survey map) in the valley of Mark'a in Zangskar, Mar stands for Mar-k'r (Drew and Survey: Markha); Nang probably a hamlet in the same valley.—Me-ru (= Miru, Survey map) on the Gya river, one march south of He-mi. Dartse.?

<sup>179</sup> In brackets are given the proper names of the lamaseries; the other names properly belong to the villages.

<sup>180</sup> Schl.'s edition.

<sup>181</sup> 1 Ladakh Rupee equal to  $\frac{4}{5}$  Rupee British coinage.

25 spears, 25 swords, 15 coats of mail, 25 pieces of silk, 10 pieces of brocade,<sup>182</sup> 25 pieces of gauze with and without a pattern,<sup>183</sup> 25 pieces of broad gauze for 'scarfs of blessing,'<sup>184</sup> and other presents in all past comprehension.

Then he reared the Leh-ch'en-pal-K'ar<sup>185</sup> (palace) of nine stories and completed it within about three years.<sup>186</sup> His own private utensils for religious worship<sup>187</sup> were all made of gold and silver and very numerous. He also caused a kagyur to be copied (the writing) in gold, silver and copper, and besides many other (religious) treatises and books.



I.—*An instalment of the Bower Manuscript.*—By DR. A. F. RUDOLF  
HOERNLE.

The portion of the Bower Manuscript which I publish in the following pages is that which I have marked in my paper "On the Date of the Bower MS.,"\* as the fifth. I placed it there as the last portion of the entire manuscript. That, however, was a mere matter of accident, this portion happening to be the last that I examined. What position the portion actually occupies in the entire MS., will have to be determined hereafter, when I have concluded the more thorough examination of the relic in which I am now engaged.

This portion of the manuscript is written on five leaves. They are regularly numbered from 1 to 5, on the left-hand margin, on the reverse sides of the leaves, in the old style of numeral figures.† On the reverse of the third leaf, however, a little distance below the current number 3, there are two other symbols which look like the number 51,

<sup>182</sup> Tib. རྩུག་ཁབ་ = Urdu: کیمچ، اب

<sup>183</sup> Tib. རྩུག་རྩི་ = Silk-gauze with dots; རྩིང་རྩི་ the same without dots. The two words combined = རྩུག་རྩིང་

<sup>184</sup> Tib. ལ་ཤེ་ is the broad variety of this kind of loose gauze. For 'scarfs of blessing' see Huc and Gabet's Memoirs, Sir Monier Williams' book, etc.

<sup>185</sup> This is the palace of Leh, a conspicuous building immediately above the city.

<sup>186</sup> Tib. ལོ་ངོ་ འཕུམ་ comp. Jäschke's Dict. *sub voce* ངོ་—ལྷ་པོ་ལྷ་པོ་ meaning: 'the first half of the tenth month,' hence here we probably ought to translate: 'the first half of the third year.'

<sup>187</sup> Tib. རྩུག་རྩི་ covers the meaning of this entire expression.

\* See ante, p. 79.

† As shown in the *Indian Antiquary*, Vol. VI, p. 44, column 4.



i. e., one symbol for 50 and just below it another for one. What this means, I do not yet know; but probably it refers to the numbering of the verses.

The first leaf is only inscribed on the reverse side, the others, on both sides.

With regard to the material on which this portion (as well as the whole MS.) is written, I may notice some curious circumstances. One of them has already been noticed in the *Proceedings* for November 1890 (p. 223), that of the leaves, "some are in single thickness and others from two to four thicknesses." Of the five leaves of this portion, the first four consist each of four layers of bark, while the last has only two layers. Each layer is of extreme tenuity, almost transparent, and one layer by itself would hardly be fit for writing material. The fifth leaf, with its two layers, is still excessively thin. The several layers are not glued together, but appear to be in their natural state of adhesion; with some little trouble, it would not be impossible to separate them.

Another point also has been already mentioned by Professor Bühler in the *Vienna Oriental Journal*, Vol. V, pp. 103, 104, that the shape of the leaves is different from that of all other birch bark MSS., hitherto known. While the usual shape is nearly quarto, on which the lines of writing run parallel to the narrower side, after the manner of European books, in the Bower MS., the shape of the leaves is very decidedly oblong, the lines of writing running parallel to the long side, after the manner of the usual Indian paper or palm-leaf MSS. (*pôthi*). The dimensions vary in the different parts of the Bower MS. In the part, which I now publish, the leaves measure  $11\frac{1}{2}$  by  $2\frac{1}{2}$  inches. In agreement with this peculiarity is the further circumstance, that the leaves of the Bower MS. were never bound or made up in a volume, as the Kashmirian birch-bark MSS. are. In the latter MSS. every two of the square leaves above referred to form one sheet; the sheet is folded in the middle, and all the sheets, each making two leaves, are together done up in the form of a volume, very much as European volumes are. The art of preparing the birch-bark leaves so as to admit of this folding and doing up into a volume is now lost,—since the time of the introduction of the manufacture of paper into Kâshmir under Akbar about 200 or 250 years ago.\* The leaves of the Bower MS. are all separate, and were held together by a string passing through a hole in them. This hole, however, is not in the middle of the leaf, but at the distance of  $3\frac{1}{2}$  inches from the margin, or at about  $\frac{1}{3}$  of its length. In the ordinary Indian palm-leaf MSS., the hole is in the middle of the leaf, or if the leaves are very

\* See Prof. Bühler's *Report on the Search of Sanskrit MSS. in Kashmir* in *Journal, Bombay As. Soc., Extra Number for 1877*, pp. 29, 30.

long, there are two holes, at equal distances from the narrow margins. The arrangement in the Bower MS. is one-sided and curious. The whole Bower MS. was enclosed between two wooden boards with holes through which the string passed. In general appearance, therefore, the manuscript resembles Indian MSS. rather than the old Kashmirian.

The third point is, that the leaves at the time they were written on were already in a considerably damaged state. Of the third leaf a considerable portion, on the right hand side, is torn out. That this gap already existed at the time the scribe wrote his copy is clearly seen from the fact, that his lines carefully extend to the margins of the gap. There is no portion of the text of the manuscript wanting at this place, as it might appear at first sight. This circumstance seems to suggest the conclusion that at the place or at the time the scribe wrote, birch bark, as a writing-material, was difficult to obtain; and that he was thus forced to employ even very damaged leaves. On the other hand, it might be said that in that case he would not have wasted as many as four thickness in one leaf. Most of the bark, however, used in the leaves of the manuscript, is of a very inferior description; it is intersected by numerous faults in its texture,\* which, in most cases, would prevent a separation of the layers in unlacerated portions of sufficient dimensions to admit of being used as writing material. It appears to me plain that, for some reason or other, the scribe was obliged to content himself with material both of damaged condition and inferior nature. The inferiority of his 'paper' is also shown by the fact, that sometimes when he attempted to write across a fault, his letters would not form, and he was obliged to abandon a half-finished letter and trace it anew on the other side of the fault, thus leaving a more or less extended gap in his line.† Thus on fl. 3a<sup>7</sup>‡ we have विमि[श]त्रो, fl. 3b<sup>6</sup> जी[व]वितुकामः, fl. 5b<sup>2</sup> व्य[व]वायाञ्च, where the abandoned half-finished letters are indicated by brackets. See also fl. 2a<sup>9</sup>.

One further point may be also noticed in this connection. The manuscript shows clear traces of a revision by another hand. In the *Proceedings* for November 1890 (p. 223) it is stated that "the writing is entirely in black ink." This is undoubtedly correct; still, occasionally, letters occur in a very light (apparently faded) ink. A closer examination shows, that in many cases these light-ink letters indicate corrections.

\* Distinctly shown in the upper leaf of plate III in the *Proceedings* for Nov. 1890.

† Compare leaf No. 1 on Plate I in *Proceedings* of April, 1891.

‡ The large number refers to the leaf, the letter, to the side of the leaf (*a* = obverse, *b* = reverse), the raised numeral, to the line. Thus 3a<sup>7</sup> = 7th line on obverse side of 3rd leaf; fl. = folio or leaf.

Thus on fl. 4b<sup>9</sup> the original writing in black ink was *mé nu*, which is false, for *mé śṛiṇu*; here the akshara *śṛi* is inserted below, in the inter-linear space, in light-ink, and the proper place of insertion between *mé* and *nu* is marked by two minute strokes above those two aksharas. Again on fl. 3b<sup>3</sup> the original black writing was प्रीक्तो च; this is corrected into प्रीक्तः च, the visarga being inserted and the top-stroke of the second vowel *ô* cancelled by two minute strokes, all in light ink. Similarly in fl. 4b<sup>4</sup> *sa-mustāṇ* is corrected to *sa-mustāṇ*. It might be supposed that the original writer might have, on revision, made these corrections himself. But this is not probable,—for two reasons: firstly, occasionally a letter in light ink is met with in the middle of a word, in the ordinary line, showing that the original writer had left a blank which was afterwards filled in by the revisor. Thus in fl. 3b<sup>7</sup>, *ajarah*, and fl. 5b<sup>6</sup>, *lavaṇôpêtair*, the visarga and the akshara *ṇô* respectively are in light ink, while all the rest is in black. Secondly, occasionally a correction was made by the original writer himself, and these corrections are in the same black ink as the rest of the writing; thus on fl. 5a<sup>2</sup> the original writer first wrote सुव्वा which he afterwards altered to सुव्वा, all in black ink. He still left another error, which the revisor also did not notice, for the word should really be सुव्वा. These observations seem to suggest the conclusion, that the manuscript is a copy, prepared somewhat inaccurately by a scribe and afterwards revised by another person; and that, in any case, it is not the autograph of the composer of the work whoever he may have been. But neither did the revisor do his work accurately, for he overlooked some palpable mistakes, thus on fl. 3b<sup>1</sup> we have *munir* instead of *munibhir*; here the akshara *bhi* is omitted, but has not been supplied by the revisor, though the omission is clearly indicated both by the sense and the metre of the verse. Other similar errors I shall note further on.

With a small exception, the whole of the portion of the manuscript now published is written in verse. The metres employed exhibit a very great variety. They are the following:—

| Metres.        |     |     | Nos. | Verses.                                               |
|----------------|-----|-----|------|-------------------------------------------------------|
| 1, Âryâ,       | ... | ... | 5½   | 51, 52, 53a, 86, 109, 110                             |
| 2, Indravajra* | ... | ... | 42½  | 12, 14, 23, 38, 67-85a, 88-103,<br>105-108            |
| 3, S'lôka      | ... | ... | 49½  | 10, 11, 28-30, 39, 43-50, 54-66,<br>87, 104, 111-131a |

\* *I. e.*, either pure Indravajra or various combinations of Indravajra and Upêndravajra.

| Metres.                    | Nos. | Verses.        |
|----------------------------|------|----------------|
| 4, Aupachchhandasika ...   | 4    | 17, 20, 21, 27 |
| 5, Kusumitalatâvellitâ ... | 1(2) | 31, (35)       |
| 6, Mâlinî ...              | 2    | 13, 42         |
| 7, Mandâkrântâ ...         | 1(2) | 9, (35)        |
| 8, Mâyâ ...                | 2    | 36, 37         |
| 9, Pramâṇikâ ...           | 1    | 26             |
| 10, Pramîtâksharâ ...      | 1    | 33             |
| 11, Prithvî ...            | 1    | 34             |
| 12, Sâlinî ...             | 2    | 24, 32         |
| 13, Sârdûlavikrîḍita ...   | 3    | 19, 40, 41     |
| 14, Sragdharâ ...          | 1    | 18             |
| 15, Sudhâ ...              | 1    | 25             |
| 16, Suvadanâ ...           | 1    | 15             |
| 17, Tôṭaka ...             | 1    | 16             |
| 18, Vamśasthavila ...      | 1    | 22             |
| 19, Vasantatilaka ...      | 9    | 1-8            |

Altogether there are 19 metres with  $129\frac{1}{2}$  verses between them. Most of them, however, are represented by only one or two verses; and all of them, except the three first-named, occur exclusively in the introduction of the treatise. The âryâ metre, on the other hand, is not employed in the introduction at all. The indravajra and ślôka, which are the most generally used metres, occur both in the introduction and in the body of the work, though more frequently in the latter. In fact the body of the work is, with the exception of the six âryâ verses, written throughout either in ślôkas or indravajras.

The only prose portions are : a longer passage between the 35th and 36th verses, and a short remark between the 48th and 49th verses.

The work consists of two distinct portions. The first is a sort of introduction which extends as far as the end of the 42nd verse, where after a great variety (18) of metres, the first long series of ślôkas commences. It treats of the discovery and the various medical uses of garlic (*laṣuna*).

The second portion, which forms the body of the work, may be described as a treatise on what in the *Suśruta* (II, 12 and IV, 20) are called the *kshudra-rôga* or minor diseases. It commences with verse 43; and includes several sub-divisions which are generally indicated by a change of metre.

The first sub-division extends to verse 50, and consists of eight ślôkas. It lays down a series of general physiological rules.



The second sub-division, down to verse 53a, written in two and one-half âryâ verses, is a sort of appendix giving a prescription, not intended for any particular disease, but to be used by healthy persons for the preservation of health.

The third sub-division, down to verse 58, consisting of five ślôkas, treats of the proportions and definitions of certain ingredients used in the composition of drugs.

The fourth sub-division, down to verse 66, consisting also of eight ślôkas, gives two (tonic) prescriptions, not intended against any particular disease, but to be used by persons in a low state of health, for the purpose of improving the general tone. The curious remark is here added (verse 66) that these tonics should not be administered to any one who has not a son or a disciple, nor to an enemy of the king, nor to any law-breaker.

The fifth sub-division, down to verse 85a, composed in indravajras, treats of the preparation and application of lotions (*âschyôtana*) for the eye. It is marked off from the following sub-division by the interpolation of an âryâ (verse 86), giving a direction as to the preparation of other remedies, similar to the lotions, and a ślôka (verse 87), introducing the subject of plasters for the face (*mukha-lêpa*).

The sixth sub-division, down to verse 103, again composed in indravajras, treats of the preparation and application of plasters for the face (*vadana-pralêpa*). It is also marked off from the following sub-division by a ślôka (verse 104), giving directions as to the size of those plasters.

The seventh sub-division, in indravajras, down to verse 108, treats of certain drugs which may be used either internally against general disorders of the system or applied externally as pastes (*viḍālaka*) to the eyes. To this are added, in âryâs (verses 109 and 110), some other prescriptions for making such pastes or collyriums (*añjana*).

The eighth sub-division, down to verse 119, in ślôkas, explains the causes of hair diseases and gives directions as to their treatment.

The ninth sub-division, down to verse 131a, also in ślôkas, treats of remedies against various kinds of cough.

The two last-mentioned sub-divisions, which are both composed in ślôkas, are marked off from each other by the interposition of the sign ○, which always indicates the end of a subject or chapter.

As there is no colophon, or the usual ending, containing the name of the work and its author, it is doubtful whether the treatise contained in this portion of the manuscript is preserved complete.

The language in which the treatise is written is Sanskrit. There is, however, a noticeable difference in the Sanskrit of the narrative por-

tion of the introduction, and that of the rest of the work in which the prescriptions are detailed. In the former the Sanskrit is comparatively plain and correct, while in the latter it is very rugged and plentifully marked with all those anomalies of orthography, grammar, prosody and vocabulary which distinguish the early extra-scholastic Sanskrit of the North-West of India. The versifying powers of the author were evidently unequal to the management of the technical portion of the work.

I will now enumerate some of the more striking instances, that I have noted down, to illustrate the different kinds of anomalies that occur in the Sanskrit of the work. It might be objected that these apparent anomalies are mere copyists errors; and undoubtedly in a few cases, they are such errors; thus in fl. 5a<sup>1</sup> (verse 95) the MS. reading *nāsyē kṛitā vidhēyā pralēpāḥ* is clearly a mere clerical error for *nāsyē kṛitē* etc. But in most cases the surrounding circumstances forbid such an explanation, and show that the anomalies belong to the character of the language. It is also to be observed that the whole of the manuscript is very fairly free of clerical errors. I believe there are only about 17 cases which are certain to come under this description; in a few others, which I have also marked in my transliteration as false readings, it may be doubtful whether they are really errors or anomalies or simply slovenly writing. To the class of distinctly clerical errors belongs the omission of two whole pādas, as in fl. 3b<sup>3</sup> (verse 55), or of a whole syllable, as in fl. 3b<sup>1</sup> *munir* for *munibhir*, fl. 2b<sup>4</sup> *chha-madirām* for *chhāta-madirām*, or of a letter, as in fl. 2b<sup>6</sup> *prayujan* for *prayunjan*; again the substitution of a false word, as in fl. 3b<sup>2</sup> *pushti* for *pakti*, or of a false akshara, as in fl. 1b<sup>4</sup> *śōtan* for *śtan* or *śrōtan*, fl. 1b<sup>6</sup> *ātithauviva* for *ātithāviva*, fl. 2b<sup>3</sup> *śālyāna* for *śālyanna*; or again a totally blundered word, as in fl. 3a<sup>7</sup> *kāśyēshasno* for *kāśasvāsaghnō*. On the other hand doubtful cases are such as fl. 3a<sup>4</sup> *undīram* for *udīram*, fl. 3a<sup>5</sup> *astrāni* for *astrāṇi* which more probably are real anomalies of the language; or such as fl. 1b<sup>4</sup> *sthitōdupati* for *sthitēndupati*, fl. 3a<sup>9</sup> *kṛīsatās* for *kṛīśabhās*, where we have probably a correct letter written so slovenly as to resemble a false letter.

But to return to the anomalies: there are first the irregularities of orthography. The following are selected examples:

Doubling of consonants: preceding *r*: e. g., in fl. 2b<sup>2</sup> *k-kṛīdi*, fl. 3b<sup>5</sup> *k-kriyā*; or preceding *y*, in fl. 5b<sup>4</sup> *siddhyati* and *sāddhyam*.

Confusion: of sibilants: e. g., *s* for *ś*, in fl. 4a<sup>3</sup> *kāsisa* for *kāśīsa*; *s* for *sh*, in fl. 2b<sup>3</sup> *kulmāsa* for *kulmāsha*; *sh* for *ś*, in fl. 5b<sup>7</sup> *shadī* for *śatī*; or *ṇ* and *n*: in fl. 3a<sup>5</sup> *kṛitāstrāni* for *kṛitāstrāṇi*, fl. 4b<sup>3</sup> *sthaunaiyaka* for *sthaunēyaka*; or of *ri* and *ri*, in fl. 3b<sup>5</sup> *mṛiyatē*

for *mriyaté*, fl. 4a<sup>7</sup> and 4a<sup>9</sup> *śritāni* for *śritāni*; fl. 3a<sup>10</sup> *krimi* for *krimi*.

Prâkritisms: omission of a final consonant: fl. 3b<sup>3</sup> *pushṭyā* for *pushṭyāḥ* (abl. sing.); fl. 3b<sup>7</sup> *samā* for *samāt* (abl. sing.); or simplification of a double consonant: fl. 3b<sup>11</sup> *sātalayōs* for *saptalayōs*.

Use of the guttural nasal before *ś* and *h*: fl. 1b<sup>9</sup> and 2a<sup>7</sup> *aṅśu* for *aṅśu*.

Next morphological irregularities:

Peculiar inflexion: in declension: fl. 2b<sup>11</sup> *nriṇā* for *nrā*; fl. 5b<sup>1</sup> *sahīyaṃ* from a base *sahīya* for *sahīyas*. In conjugation: fl. 2b<sup>9</sup> *pāyayīta* for *pāyayēta*\*; change of class: fl. 5b<sup>3</sup> *pratapyēt* (IVth, rare, 'to warm one's self') for *pratapēt*; âtm. for parasm.: fl. 2b<sup>3</sup> *śriṇushva* (but fl. 3a<sup>9</sup> *śriṇu*), fl. 4b<sup>2</sup> *vinivartayēta* for *vinivarttayēt*.

Change of gender: neut. for masc.: fl. 3b<sup>2</sup> *utsāham* (but fl. 3b<sup>3</sup> *utsāhaḥ*), fl. 4a<sup>3</sup> *amaradāru*; masc. for neut.: fl. 3b<sup>11</sup> *lingaś=cha*, fl. 4b<sup>3</sup> *āśchyōtanō vidhēyaḥ* (but fl. 4b<sup>2</sup> *āśchyōtanam*); fem. for masc.: fl. 5a<sup>3</sup> *rōdhrām* (but fl. 5a<sup>10</sup> *rōdhrām*); fem. for neut.: fl. 5a<sup>10</sup> *ayō vighrīṣṭām†* for *vighrīṣṭām*.

Next syntactical irregularities:

Exchange of cases: acc. for nom.: fl. 5a<sup>6</sup> *dāham rujām sa-dāhām śāmyanti* for *dāha rujā sa-dāhā*; nom. for acc.: fl. 5a<sup>2</sup> *mūrvvā=pi go-mūtra-yutām vadanti* for *mūrvvām=āpi*;‡ altogether the acc. and nom. cases are used very promiscuously, see under 'abnormal concord.' Instr. for nom.: fl. 2b<sup>11</sup> *nriṇā upakalpayēt* for *nā*; nom. for loc., fl. 5a<sup>5</sup> *vidrutāś=cha vadana-pralēpē* for *vidrutē cha*; gen. for acc., fl. 1b<sup>9</sup> *mūlās=tat-parichāarakasya janasya ārōpayēt* for *parichāarakam janam*; gen. for dat.: fl. 2a<sup>6</sup> *bhujām prayōjyō* for *bhugbhyaḥ*; and loc. for dat.: fl. 4a<sup>3</sup> *rāja-dvīṣṭē na dātavyō* for *rājadvīṣṭāya*.

Abnormal concord: incongruent cases: acc. and nom.: fl. 3a<sup>1</sup> *prasthān dēyāḥ* for *prasthāḥ*; for other examples, see above. Incongruent genders: masc. and neut.: fl. 3a<sup>9</sup> *gunāpi prōchyamānān* (acc. pl.) for *prōchyamānāni*, fl. 4b<sup>2</sup> *ēsha śritas ... āśchyōtanam* for *ētat śritam*, 4b<sup>11</sup> *ētāni mīṣṭitā vā*; for other examples, see above under 'change of gender.'

Abnormal construction: many of the verses containing prescriptions

\* This, however, may be merely a case of slovenly writing of the vowel-mark.

† This may be due to the mere exigencies of the metre which here requires a long syllable.

‡ This, however, of course, would not have suited the metre.

are very halting and defy every attempt at regular construction. Thus in verse 36 (fl. 3a<sup>5</sup>) one would expect the accusative of *kuḍava* in dependence on *yumjyāt*; one would also rather expect *kāśaśvāsa-vighnaṃ viḍam*. Quite literally translated, the construction seems to be this: "Having crushed one cleaned prastha of garlic, one should join it with one half-pala of powdered triphala; and of both clarified butter and oil one kuḍava: this, when allowed to stand for ten days, they favour as a remedial 'viḍa' against cough and asthma." An other striking example is the prescription in verses 67-69; there is a wonderful mixture of accusatives and nominatives in verses 67 and 68; and the exact connection of *dvābhyāṃ tribhir* is doubtful. Verses, 75, 76, 91, 101 and others are equally difficult to construe.

Peculiar words or meanings of words: the following I have not found noted in any Sanskrit dictionary available to me:

- agra-manas* 'attentive' or 'intelligent', fl. 3a<sup>9</sup>.
- agaja* 'a kind of liquor', fl. 2b<sup>4</sup>.
- abḍa* 'mica' (syn. *abhra*), fl. 1b<sup>4</sup>.
- ✓ *abhi-vi-ji*, 'overcome', fl. 3a<sup>1</sup>, in *abhivijitya*.
- abhllu*, some kind of eye-disease, fl. 4b<sup>6</sup>, 5a<sup>3</sup>, 5a<sup>5</sup>.
- utkṣhita*, 'besmeared', fl. 1b<sup>6</sup>.
- udaka*, 'water-animal', fl. 5b<sup>6</sup>.
- undīra*, 'excellent', fl. 3a<sup>4</sup>, (perhaps a false reading).
- upalābha*, 'resemblance', fl. 1b<sup>4</sup>.
- ushita*, 'allowed to stand', fl. 2b<sup>11</sup>; see *vyushṭa*.
- kṛīṣa-bhās*, 'appearing lean', fl. 3a<sup>9</sup>, (if correctly read).
- khalita*, 'bald', in *a-khalitā*, fl. 5b<sup>3</sup>.
- jīvitū*, 'life', fl. 3b<sup>6</sup>, (perhaps a false reading).
- nikvātha*, 'boiling', fl. 3a<sup>2</sup>.
- nīlīka*, some kind of eye-disease, fl. 5a<sup>3</sup>.
- pilpa*, 'suppuration' (?), fl. 5a<sup>4</sup>; in *sa-pīḍpam*.
- ✓ *pra-śuṣh*, 'desiccate', fl. 4b<sup>11</sup>, in *praśoṣhya*.
- yashṭihva*, 'liquorice', fl. 5a<sup>3</sup>.
- varṭṭyā* (fem.), 'bougie', fl. 3b<sup>3</sup> (syn. *varṭti*).
- viḍa*, 'paste' (?), fl. 3a<sup>6</sup>, (cf. *viḍālaka*).
- ✓ *vēdh*, 'pierce', fl. 5b<sup>4</sup>, (cf. causal of ✓ *vyadh*).
- vyushṭa*, 'allowed to stand', fl. 2b<sup>7</sup>, 3a<sup>6</sup>, see *ushita*.
- vyatimīśra*, 'mixed', fl. 3a<sup>7</sup>.
- shadi*, a species of plant, fl. 5b<sup>7</sup>, 5b<sup>3</sup>, (cf. *śaṭī*).
- sahīya*, 'fortified with', 'joined with', fl. 5a<sup>11</sup>, 5b<sup>1</sup> (cf. *saḥīyas*).
- saṃsūdana*, 'destroyer', fl. 3a<sup>10</sup>.



*suṽīraja*, 'fermented barley-water' or 'kāñjī', fl. 2b<sup>5</sup>, (syn. *sau-vīraka*).

*sthaunaiyaka*, a species of plant, fl. 4b<sup>3</sup> (perhaps a false reading).

*śmārshmin*, 'having a sound body', fl. 3a<sup>1</sup> (perhaps a false reading).

Rare words: *athō* (for *athā*), 'then', fl. 4b<sup>6</sup>.

*āt*, 'afterwards', fl. 4b<sup>3</sup>.

*u* (?), 'then', fl. 2b<sup>2</sup>.

*ĕkadhyam*, 'together with', fl. 2b<sup>6</sup>.

Marks of interpunctuation: a symbol, exactly like the old numeral figure 'one', occurs twice, apparently as a mark of interpunctuation, on fl. 3b<sup>8</sup> and 3b<sup>4</sup>. The same symbol is also used to indicate a blank space at the beginning of the second and last lines on fl. 1b.

In this connection, I may note, that the two signs of the Jihvāmūliya and Upadhmāniya never occur, at least, in this portion of the manuscript.

The introduction affords some curious historical information. There were ten sages living together in the Himālayas: Âtrēya, Hārīta, Parāśara, Bhēla, Ganga, Sāmbavya, Suśruta, Vasishṭha, Karāla and Kāpya. Once the attention of Suśruta was attracted by a new plant, — it was the *laśuna* or garlic —, and he went to ask information from a Muni named Kāśirāja. This Muni is then represented as giving to Suśruta all the medical information contained in the manuscript (see verses 9, 39).

This narrative agrees in one leading point with the opening statement of the well-known work, known as the 'Suśruta.' There it is stated that Suśruta with other sages addressed the Kāśirāja\* Divôdāsa Dhanwantari in his (Himalayan) hermitage and obtained their instruction in medicine from him. Of the companions of Suśruta seven only are named: Aupadhēnava, Vaitaraṇa, Aurabhra, Paushkalāvata, Karavīrya, Gôpura and Rakshita.† None of these agrees with the names given in our manuscript.

\* This *Kāśirāja* is usually understood to be a title "king of Kāśī (Benares)"; though, even then, it does not follow that "the cultivation of medicine is by Suśruta himself expressly assigned to the city of Kāśī (Benares)" (see Weber's History of Indian Literature, p. 269); for Suśruta learned his medicine from the Kāśirāja while the latter was living with other sages 'in retirement' (*āśrama*), which according to the usual precedents must be understood to be in the Himālayas. But from the way in which the name Kāśirāja is used in our MS., it seems clear that it is understood as a proper name of a Muni. The names Divôdasa and Dhanwantari do not occur at all in the MS.

† Three of them, Aupadhēnava, Aurabhra and Paushkalāvata, are again named at the end of the fourth chapter.

On the other hand some of the names mentioned in the introduction to the other well-known Hindû work on medicine, known as the 'Charaka', agree with those in our manuscript. In that introduction it is said that Âtrêya taught medicine to his six pupils: Agnivêśa, Bhêla, Jatûkarna, Parâśara, Hârîta\*, and Kshârapâni. Four of these names are identical: Âtrêya, Bhêla, Parâśara, and Hârîta, but in every other respect the statements of the two authorities differ from one another. According to the Charaka, Âtrêya was the teacher of Bhêla, Parâśara and Hârîta, while according to our manuscript these four men were fellow-students, and were taught by Kâśîrâja. In the Charaka, Suśruta is altogether omitted, while according to our manuscript, he was the most prominent in the company of fellow-students and their mouthpiece. This, of course, is explained by the fact, that the two works of Charaka and Suśruta, as we now have them, in the main represent two different schools or rather departments of medical science—the former, medicine, the latter, surgery. Of this assumed division there is no sign in our manuscript; nothing in its contents, though coming from Suśruta, is connected with surgery; and in its introduction both Âtrêya, the fountain-head of the Charaka, and Suśruta are mentioned in company. But neither the Suśruta nor the Charaka, as we now have them, are original works; they are clearly, both of them, recensions (probably much modified) of earlier works. The earlier work on which the Charaka Saṃhitâ is based was one written by Agnivêśa (said to have been a pupil of Âtrêya), and was probably still extant, as Dr. Dutt in his *Hindu Materia Medica* (p. vii) shews, at the time of Vâgbhaṭṭa. That the work now called Suśruta is not the composition of Suśruta himself, is shown by the opening salutation in which Suśruta himself, along with other divine personages, is invoked. Of what sort the two original works were, we have perhaps hardly sufficient right to conclude from their modern re-cast representatives. At the time of the composition of our manuscript, however, it is clear, the original work of Suśruta (the so-called *vridhha Suśruta*?) already existed.

That neither of the two works, now known as the Charaka and the Suśruta, can be accepted as ancient and original compositions, has been clearly shown by Dr. E. Haas, in his two Essays in the *Journal of the German Oriental Society* (vol. XXX, p. 617, and vol. XXXI, p. 647). The Suśruta, especially, would seem to be a comparatively modern compilation, somewhat loosely and unscientifically put together in the manner of the Purâṇas. But Dr. Haas goes much too far in his theory of the origin of that work, which, though seriously put forward, reads

\* Our MS. spells the name Hârîta, which is there guaranteed by the metre. I may here mention that a *Hârîta Saṃhitâ* (*Âtrêya-muni-bhâshitâ*) has been edited by Kaviraj Binod Lal Sen. (Calcutta, Ayurveda Press, 146 Lower Chitpore Road).

much more like an elaborate joke. According to him the name *Suśruta* is only an Indian adaptation of the Arabic name *Suqrât* (سقراط), which itself is a confusion with *Buqrât* (بقراط), the Arabic corruption of the Greek Hippokrates (*ibid.*, p. 652). And in the name of the city of *Kâśi* (Benares), where (as Dr. Haas believes) the medical science is said to have originated, he sees an adaptation of the name of the island of *Cos* (κῶς), which was known to the Arabs to have been the native land of Hippokrates (*ibid.*, p. 654). Accordingly he holds, that the *Suśruta* was compiled somewhere between the 12th and 15th centuries A. D., and is based on information supplied by Muhammadan physicians (*ibid.*, pp. 666, 667).

One of the main pillars of this theory is the opinion held by Dr. Haas (and others), that according to the *Suśruta*, *Kâśi*-Benares is the place where Hindû medical science took its origin (see *ibid.*, pp. 627, 665, 654). This opinion is based on the statement, that “*Suśruta* and his companions addressed the *Kâśirâja* *Divôdâsa* *Dhanvantari* in his *Âśrama*”. Now even if it be right to take *Kâśirâja* as a title (‘king of *Kâśi*’) of *Divôdâsa* *Dhanvantari*, it does not follow that the *âśrama*, where the instruction took place, was in or near *Kâśi*. On the contrary, all that we know of Indian habits suggests that the meaning of *Suśruta* is that when the “king of *Kâśi*” communicated his instruction, he had resigned his kingdom and retired into an Himalayan retreat, to study and practice asceticism. This may be all invention, but it is just what would be consonant with the ideas of a Hindû author. But it seems to me, our manuscript renders it very improbable that *Kâśirâja* is a title; it may have been so in the thoughts of the author of the modern *Suśruta*, but in our manuscript itself it seems to be used rather as the proper name of a Muni. This takes away all force from the argument based on a supposed origin of the medical science in Benares.

But in his main principles, I am disposed to believe, Dr. Haas is correct. He distinguishes between an earlier and a later period of the literary cultivation of medical science among the Hindûs (*ibid.*, pp. 648, 650). The earlier period extends down to the arrival of the Arabs in India, who brought with them the knowledge of Greek medicine. To this period, Dr. Haas thinks, the *Charaka* may belong (*ibid.*, p. 651) as well as other treatises, no more now identifiable (*ibid.*, pp. 628, 629, 657). Two of the earlier works of the second period Dr. Haas considers to be *Vâgbhaṭṭa*’s *Aṣṭāṅga-hridaya* and the *Mâdhava-nidâna* (*ibid.*, p. 649, 650). The *Suśruta*, as already remarked, he places also in the second period, but much later, after the 12th century. This may be true, so far as the work, now known as the *Suśruta*, is concerned; but that some *Suśruta* existed already in the earlier period, is now indisputably proved by our manuscript. It not only proves that a *Suśruta* existed



in the earlier period, but that its existence is traceable back to (at least) the fifth century A. D.; and this fact lends very strong support to the commonly held opinion that the *Kitáb-i-Susrud* (كتاب مسرود), mentioned by Ibn Abi Uṣaibi'ah (8th century A. D.), is really a 'book Suśruta'. But what particular Suśruta it may have been, it would be, at present, impossible to say.

Our manuscript,—at least in the portion, now published—shows some affinities to both the Suśruta and the Charaka. I have not yet been able to subject these two works to a very careful examination with a view to discover resemblances or identities. This, of course, is very desirable; and I hope to do so, as soon as I have more leisure. In the meantime I may note here a few coincidences that I have noticed in the course of a cursory glance through them. My references are to Pandit Jivānanda's editions;\* I regret, that no better editions are, at present, available to me. For the English translation of Suśruta I refer to that by Doctors Uday Chand Dutt and Aughtore Chunder Chatto-padhya in the Bibliotheca Indica.

The only striking coincidence that I have noticed with regard to the Suśruta is the prescription given in verses 60–66. It refers to ten purgative pills (*mōḍaka*), one of which is to be taken daily on ten consecutive days. A prescription, practically identical, occurs in Suśruta's Sūtrasthāna, Chapt. 44, ślōkas 50, 51 (p. 166, and transl. p. 211). The number of ingredients differs, but the principal ingredients are the same, and the number of pills and days is also the same. Moreover the place in the system where the prescription is introduced has some similarity. I have not been able to discover this particular prescription in the Charaka, though perhaps it may be found in it.

With regard to the Charaka I have noticed the following coincidences. In verses 121 and 122 there is a prescription against cough. The first portion of this prescription exhibits a very close resemblance to the first portion of a prescription occurring in the Chikitsita Sthāna of the Charaka, in its 20th chapter which deals with the treatment of cough. It is at the bottom of page 735. I have not found this prescription in the Suśruta. Another coincidence occurs in verse 66. Here we have the direction that a certain medicine "should not be administered to any one who has no son nor disciple, nor should it be given to an enemy of the king, nor to any other sinful liver." A very similar direction occurs in the Charaka, in the 8th chapter of the Vimāna Sthāna (p. 296):† "medicines should never be administered to the king's

\* Also Dallana Mishra's Commentary, the Nibandha Sangraha, published by Jivānanda Vidyāsāgara.

† Also quoted by Prof. von Roth in *Journal, German Oriental Society*, Vol. XXVI, p. 448.



enemies nor to the enemies of grandees (*mahājana*), nor to any whose habits are excentric, sinful or disagreeable, nor to any who will not obey directions, etc., nor to such as are on the point of death, nor to women whose husbands are absent or who have no protector.”\* In the Charaka this direction is a general one; in our manuscript it appears to have reference to a particular prescription. I may note, however, that the identical direction also occurs in the introduction to the first part of the Bower MS., where it is given, not with reference to a particular remedy, but, as in the Charaka, to medical assistance generally.

On the other hand, I have noticed some particulars in which the views or rules of the Suśruta and the Charaka appear to me to differ considerably from those set forth in our manuscript. Thus in verses 43–50 the digestive faculty (*agni*) is made the basis of all vital conditions, the last of which is stated to be longevity (*āyus*), and the physician is advised to direct his first enquiries to the state of the digestion of his patient. In the Suśruta, however, (chapt. 35, Sūtrasthāna, p. 126, transl. p. 143) the physician is directed first of all to enquire into the longevity (*āyus*) of his patient, and only if he is satisfied on this point, he is to proceed to examine the patient’s digestion (*agni*). Again in verse 43, food (*āhāra*) is mentioned as the first item in a series, not as being the first in the series of physiological states, but only because, as explained in verse 44, food is that which sets the digestive faculty (*agni*), the first of the vital functions, in activity. In the Suśruta, however, (chapt. 46 in Sūtrasthāna, p. 192, transl. p. 248) a much more important position is assigned to food (*āhāra*); it is made the basis of everything, of strength (*bala*), colour (*varṇa*) and vitality (*śāśas*). It would almost seem as if the writer of the Suśruta had misunderstood or exaggerated the reason why ‘food’ is placed first in the series in our manuscript. Again four kinds of digestion (*agni*) are distinguished: *sama*, *vishama*, *tīkṣhṇa* and *maṇḍa*. Now in verse 46 of our manuscript, the direction is given, in case of *vishama* or irregular digestion, to take curdled milk, clarified butter and the like. The same direction is also given in the Suśruta (chapt. 35 of the Sūtrasthāna, p. 131, transl., pp. 147, 148), but with reference to too active (*tīkṣhṇa*) digestion. Another instance are the directions with reference to honey and urine. In our manuscript, verse 58, the use of these substances is limited to the products of the

\* The corresponding passage in the Suśruta is much shorter. It occurs at the end of the 2nd chapter of the Sūtrasthāna, and runs as follows: “Hunters, fowlers, outcasts and sinners (*pāpakārin*) should not be treated.” (See p. 7, transl., p. 9). There is not much resemblance here, except perhaps in the term *pāpakārin*, for which our MS. has *pāpachārin*. In the Hārīta Saṃhitā the corresponding passage is entirely different: “The Āyurvêda should not be given indiscriminately to any one; it may not be given to unbelievers, nor to fools, nor to the low.” See Binod Lal Sen’s ed., p. 3.

honeybee and the cow respectively; but in the *Suśruta* there is no such limitation, though bee's honey is said to be the best and cow's urine is enjoined to be used in preference to that of other domestic animals; see chapt. 45 in the *Sūtrasthāna*, pp. 184, 191, transl., pp. 235, 246, 247. There are some other substances, such as horn, hoof, etc., mentioned in verse 58; and with reference to all of these the use is limited to products of the cow. Similar, though not the same, substances are mentioned in the *Suśruta*, verse 12 of chapt. 37, *Sūtrasthāna* (p. 138, transl., p. 157), but here again their use is not limited to products of the cow. For another difference see footnote 71.

In the *Charaka* I have noticed the following instances of a difference. Both in our manuscript and in the *Charaka* three sorts of diseases of the hair are mentioned: *khālitya* 'baldness', *palita* 'grey hair', and *tāmrabāla* or (in the *Charaka*) *hari-lōman* 'red hair.' As remedies our manuscript prescribes (verses 117–119): venesections, emetics, unguents, hair-dyes and washings. The *Charaka*, on the other hand, directs the use of *nasyas* or 'the application of medicated substances to the nose' (see Dutt's *Materia Medica*, p. 17), unguents, and the applications of plasters to the scalp and the face; see the *Chikitsa Sthāna*, section on baldness, pp. 798, 799.

On the whole, therefore, I cannot say that—so far—I have discovered any very striking connection of the Bower MS. with either the *Suśruta* or the *Charaka*. It is different with the *Chakradatta*, or the *Chikitsa Sangraha*, a compilation from various medical works made by *Chakrapāṇidatta*. This appears to be a work, dating not later than from the 9th or 10th century (see Dr. Dutt, in his *Met. Med.*, p. xi). My references are to *Kaviraj Pyari Mohan Sen-Gupta's* edition. In this compilation I have found several of the prescriptions of the Bower MS., in almost identical words. Thus the prescription against cough, given in verse 123, occurs as the last of a set of three prescriptions, quoted in the *Chakradatta*, p. 210 (No. 2). The only difference is that the drugs are enumerated in a different order in the first half-line of the śloka. Again the prescription in verse 128 occurs in the *Chakradatta* on p. 216 (No. 70), and this time, in perfectly identical form. Again the prescription in verses 121 and 122, which I have already mentioned as also occurring in the *Charaka*, is also found in the *Chakradatta*, p. 210, as the second in the first set of two prescriptions. The agreement, however, only extends to the first portion, given in verse 121; and even here it is not very close. But this first portion, as given in the *Chakradatta*, is identical with the first portion, as given in the *Charaka*, on p. 735 (bottom). The second portion, as given in the *Chakradatta*, differs from the versions, given in both the *Charaka* and in our manuscript. I may add that the first prescription for cough, given in the

Chakradatta, on p. 210 (commencing with *vāstukṣ vāyasī śākṇ*), occurs in identical words in the Charaka, on p. 736 (middle), and that there is a faint similarity in this prescription to that given in verse 120 of our manuscript. It is evident, that some of the prescriptions in Chakrapāṇi's compilation are taken from the Charaka; but I do not know whence he derived the others, which are identical with some in our manuscript (verses 123, 128). Further, the prescription in verses 121, 122 (commencing with *grāmyānūpa*) seems clearly to point to some connection between the medical work, contained in our manuscript and those in the Charaka and the Chakradatta. It would be satisfactory to be able to discover what the sources were on which Chakrapāṇi drew for his compilation; they are not specified anywhere, I believe, in his book.

For the sake of completeness I may add that in the first portion of the Bower MS., the introduction of which I have published in the *Proceedings* for April, I have come across several prescriptions which, in quite or almost identical terms, are incorporated in the Chakradatta.

There is another work which I have been able to examine cursorily and which offers a few examples of coincidences. This is the Vangasēna, by an author of the same name. It appears to be a compilation from different medical works, but professes to be a new recension of what was formerly known as the Agastī Saṃhitā.\*

The formula for the purgative pills, in verses 60–63 of our manuscript, which I have already noted as occurring in the Sūśruta, is to be found also in the Vangasēna, in one of its last chapters (the Virêchana Adhikāra), on p. 1020; and it may be noted, that in our manuscript, the composition of the formula is expressly ascribed to Agastī (in verse 64), whose work the Vangasēna professes to reproduce.† A very curious verbal agreement occurs in verse 84 of our manuscript. Its first half-line (*āśchyōtanam mānusha-dugdha yuktam* etc.) is found identically as the second half-line

\* This appears from the statement at the end of the book: *Agastī-saṃhitā-ēyam prāk=kyātā maj-janmatas=tataḥ | Gadādhara-grihē janma-labdā mē punaḥ saṃskritā || Vangasēna iti nāmnā vikhyātas=tad-anantaram | granthō = 'yam sarva-siddhānta-sāraḥ śighra-phala-daḥ ||* According to this statement Vangasēna was a son of the (physician) Gadādhara. The Vangasēna has been published by Nandakumar Gosvami, a Baidya of Bêrī, District Rohtak, in 1889, at 57 Cotton Street, Calcutta. I owe the loan of my copy to the kindness of Pandit Hara Prasada Shastri.

† The versions in the Vangasēna and Sūśruta are practically identical; but differ a little from the version in our manuscript, see footnote to the translation. I have noticed other coincidences between those two works. For example, the whole of the remarks of the Vangasēna on urine (pp. 1103, 1104) and a portion of its remarks on liquors (p. 1103) are found verbally the same in Sūśruta I, 45 (p. 187, 191). Again the prescription against *pittābhishyanda* or ophthalmia, given in Sūśruta VI, 10 (p. 680, verses 2–5), is found in the Vangasēna in the chapter on eye-diseases, p. 789, verses 86–88. In this case, though the ingredients are the same, they are given in a different order.



of a formula given in the Vangasêna, on p. 788. The preceding formulas, however, are entirely different,\* and I have not been able to trace the formula of our manuscript in the Vangasêna, or *vice versa*. I may also note, that the formula, given in verse 76 of our manuscript for ophthalmia, shows a curious resemblance to that given in verses 107 and 108 of the Vangasêna (p. 791). There is also some slight resemblance between the formula, given in verses 70–72 of our manuscript, and that in the Vangasêna, verses 86, 87 (p. 789) and the corresponding verses 2–5 in the Suśruta (pp. 680, 681). It would seem that the options permitted in the formulas of our manuscript (verses 67–74), are made up into a large variety of distinct formulas in both the Vangasêna and the Suśruta.

I may note, that neither opium nor mercury is mentioned in our manuscript, though, as both drugs came into India with the Muham-madans, that goes without saying. But it may be noticed that the MS. mentions the *râti-kusuma*, or calx of brass, in one of its prescriptions, in verse 109 (fl. 5a<sup>11</sup>), the knowledge of which, as Professor Garbe points out in his *Indische Mineralien* (p. 56), has been lost in India since many centuries. Also some other drugs, now no longer available, occur, such as the *jīvaka*, *mēdā*, etc.

Perhaps the mention of lions and elephants and of the light complexion of the people in the introductory verses 6, 41, and the omission of the winter in verse 92, should be noticed, as giving some indication regarding the place of composition of the work.

With regard to the edition and translation, I should explain, that the Nāgari transcript gives the text as it stands in the MS., broken letters or aksharas, of course, being printed in full; but where the consonant of a single akshara or a portion of a compound akshara was entirely lost, the missing portion is represented by a blank type (□), to which the extant portion of the akshara, whether vowel or consonant, is joined. Aksharas, which are wholly wanting, are indicated by dots,—in numbers equal to the missing aksharas. Aksharas which *now* are wanting, but which were still extant, when I first made my transcript, are enclosed within straight brackets.

In the Roman transliteration, I have attempted to show clearly the state of the original manuscript. Broken aksharas of the MS. text are indicated by round brackets; entirely missing portions are indicated by as many lengths and shorts as were shown by the metres to have existed. Occasionally, when it was practicable, I have made an attempt to restore the text. In some cases, this was easy and the restoration ob-

\* In the Vangasêna the verse runs as follows : *nimbasya patraiḥ parilipyā lōdhram svēdā-āgninā chūrṇam=ath=āpi kalkam | āśehyōtanam mānusha-dugdha-miśram pitt-āsra-vāt-āpaham=agryam=uktam.*



vious, as the extant traces taken together with the metre and the context indicated clearly enough what the missing letters must have been. All such restorations, however, are invariably included within straight brackets.

The translation is necessarily somewhat free here and there, though always substantially faithful. I cannot feel certain, however, that I have always grasped the right meaning; the diction of the work is too rugged, and my acquaintance with medicine, limited. I have tried to obtain help, as far as I could, from Hindû practitioners. The Sanskrit names of the drugs I have retained, except in those few cases, where there are well-known English equivalents. In the case of those Sanskrit names, whose identity is certain, I have added in brackets their scientific equivalents; but in some cases I could not feel certain as to which plant or drug was really intended. I consulted chiefly Dr. Dutt's useful *Hindu Materia Medica* and Professor Garbe's *Indische Mineralien*; also Dr. Watt's *Economic Products of India*.

#### TRANSCRIPT.

First Leaf: Reverse.

- १ ओं देवर्षिसिद्धगणकिन्नरनागयक्षविद्याधराध्युषितसानुरनन्तरतः  
पुण्यस्त्रिपिष्टपतलामृतदेवरम्यः . □ . □ . . . . .
- २ नुदयः ॥ यत्र स्फुटन्मणिसहस्रमयूखजालविह्वोभितं दशसु दिक्षु  
भयात्पलीनम् चन्द्रोदसूर्यऊतभुङ्क्विलयाभिगङ्गं प्रावृ .
- ३ शास्त्रपि पुनर्न तमो भ्युपैति ॥ यः सेव्यते मुनिगणैरनिशं सशिव्यै-  
र्नैकैः समित्कुशफलोदकपुष्पहस्तैः स्वर्गाङ्गनाभिरपि च प्रविमृष्टशाखाः
- ४ कुंजेषु यस्य तरवः कुसुमार्थिनीभिः ॥ यत्र त्रिलोचनजटामुकुटैक-  
देशनिव्यस्थितोद्रपतिदौधितिसंप्रयोगात् श्रोतन्दिवापि हिमवत्स्फटिकोप-  
लाभमब्दै-
- ५ नृकान्तमणयः प्रवरं खवंति ॥ यस्याब्दमुक्तजलधौतशिलातलेषु  
कुंजेषु नैकविधवीगणनादितेषु रम्येषु पुष्पफलद्रुमसंक-
- ६ टेषु रात्रौ ऊताशनवदौघधयो ज्वलन्ति ॥ चन्द्रांशुगौरतरकेसर-  
भारभङ्गिर्मत्तेभमस्तकतटक्षतजोत्क्षितांशैः सिंहैः शिलोच्चयगुहावदना-
- ७ दृष्ट्वासन्नं क्षम्यते मुधरवृन्दरवोऽपि यत्र ॥ तस्मिन्गिरावनिमण्डल-  
मण्डभूते सर्व्वातिथौविव जगद्धिभवप्रदानैः सर्व्वतुपुष्पफलवद्भूमरम्य-

- ८ सानावेते बिधूततमसो मुनयो वसन्ति ॥ आत्रेयहस्तिपराशर-  
भेलगर्गशांबयसुश्रुतवसिष्ठकरालकाप्याः सर्वैषधौरसगणाकृतिवीर्यनाम-  
६ जिज्ञासवः समुदिताः शतशः प्रचेरुः ॥ दृष्ट्वा पत्रैर्हरितहरितैरिन्दु-  
नीलप्रकाशैः कन्दैः कुन्दस्फटिककुमुदेन्दुशुभांशुभैः उत्पन्नास्थो  
१० मुनिमुपगतः सुश्रुतः काशिराजं किन्वेतत्स्यादथ स भगवानाह तस्मै  
यथावत् ॥ पुरामृतं प्रमथितमसुरेन्द्रः स्वयं पपी तस्य चिच्छेद भगवानु-  
११ त्तामांगं जनार्दनः ॥ कण्ठनाडी समासन्ना विच्छिन्ने तस्य मूर्धनि  
विन्दवः पतिता भूमावाद्यं तस्येह जन्म तु ॥

Second Leaf: Obverse.

- १ न भक्त्यत्वेनमतश्च विप्राः शरीरसंपर्काविनिःसृतत्वात् गन्धोग्रताम-  
प्यत एव चास्य वदन्ति शास्त्राधिगमप्रवीणाः ॥ लवणरस[वियोगा]दाजरेन  
रश्मून्मू  
२ लशुन इति तु संज्ञा चास्य लोकप्रतीता बज्रभिरिह किमुक्तेर्देश-  
भाषाभिधानैः पृष्ट्वा रसगुणवीर्याण्यस्य चैवोपयोगात् ॥ रसे च पाके च  
कटुः प्र  
३ दिष्टः पाके तथा स्वादुरुदाहृतो न्यः लघुश्च गन्धेन सदुर्जराश्र-  
वीर्येण चोष्णः प्रथितश्च रुच्यः ॥ आंक्षोष्णस्नेहभावात्पवनबलहरः  
४ प्रोक्तो मुनिवृषैः माधुर्यात्पित्तभावादपि च स रसतया पित्तप्रशमनः  
औष्ण्यात्तैक्ष्ण्यत्वादुत्पात्तफबलविजयी विद्वद्भिर्हृदितः सर्वांशोगान्निहत्या-  
दिति  
५ विधिविहितो दोषत्रयहरः ॥ पवनं विनिहत्यपि चास्थिगतं कफ-  
मप्यचिरादुदितं शमयेत् जनयेदपि चाग्निबलं प्रबलं बलवत्संकरः प्रव-  
६ रश्च मतः ॥ अथ बज्रविधमद्यमांससर्पिर्यवगोधूमशुजां सुखात्म-  
कानाम् अयमिह लशुनोत्सवः प्रयोज्यो हिमकाले च मधौ च माध-  
७ वे च ॥ त्यज्यंते कामिनीभिर्जयनसमुचिता यत्र काञ्चीकलापाः हाराः  
शैत्यान्न वक्षस्तनतटयुगलापीडनात्संप्रयांति कांता नेन्दुशुजालयतिकरस-  
भगाहर्म्य-

- ८ पृष्ठोपभोगाः काले तस्मिन्प्रयोज्यो ह्यगुरु बज्रमतं कुकुमांकाश्च  
यत्र ॥ हर्म्याग्रेष्वथ तोरणेषु बलभीद्वारेषु चाविष्कृताः कन्दाद्या लघुन-  
खजो विरचयेद्भूमौ
- ९ [त]थैवार्चनम् मालास्तत्परिचारकस्य च जनस्यारोपयेत्तन्मथोरित्य-  
स्यैव विधिर्जनस्य विहितः स्वल्पोवमानामतः ॥ अथ शुद्धतनुः शुचिर्विविक्तः
- १० [सुरवि]प्राग्प्रतिपूज्य पावकं च लघुनात्स्वरसं पटांतपूतं प्रपिवेदङ्गि  
शुभयद्दर्शयुक्ते ॥ कुडवं कुडवाद्यापि चार्धं कुडवं सार्धमतो पि वाति[—]

Second Leaf : Reverse.

- १ नियता न हि काचिदत्र मात्रा प्रपिवेदोषबलामयानि दृष्ट्वा ॥ स-  
तालवृत्तं व्यजनानिलैः शुभैः पवन्तमन समभस्पृशच्छनः
- २ भवेदु मूर्च्छापि वतो पि वा यदि स्पृशेत्ततः शीतजलैः सचन्दनैः ॥  
सुराहृतीयांशविमूर्च्छितस्य गण्डूषमेकं प्रपिवेद्रसस्य पूर्वं गलक्रीडिवि . .
- ३ हेतोः स्थित्वा सुहृत्तच्च पिवेत्सशेषम् ॥ तस्मिन्नीर्ण्य क्षीराशाल्यान्-  
भुक्स्यात् क्षीरायोज्यो जांगलानां रसैर्वा हृद्यैर्घृषैः संस्कृतैर्वैदलैर्वा युक्तः  
स्नेहैर्मात्रयैकं च
- ४ कालम् ॥ पिवेन्माद्रीकं वा मधु मधुसमांशाच्छमदिराम् अरिष्टं  
शीघ्रं वा जगलमगजं मैरेयमपि वा अतो न्यद्वा मद्यं भवति गुणवद्यत्त-  
त्सलिलम् पिवेदेकैकं वा न
- ५ भवति यथा मद्यव्यतिकरः ॥ अमद्यपः सुखोदकं पिवेत्तथाम्ल-  
कांचिकम् तुषोदकं सुवीरजं पिवेच्च मस्तु यच्छुभम् ॥ न गुडेन कथञ्चिदेन-  
मद्यान्न तथामच्च जलं पिवे-
- ६ त्रयुजन् सततञ्च भवेदजीर्णशंकी न च खादेदबह्वनि वासराणि ॥  
अथ कन्दाङ्कुभाङ्कुत्तणान्पिष्टान्सर्पिश्च तत्समम् खजेनाभिप्रमथ्यैतदेकथं  
घृतभाजने ॥
- ७ व्युष्टं दशाहात्प्रभृति भक्तयेद्विल्वसंमितम् जीर्णं च रसकल्पोक्त-  
माहारविधिमाचरेत् द्वावप्येतावभिहितौ कल्पो प्राग्रहरौ मया अनयो-  
र्यत्नवा-

- ८ न्नास्यात्कल्पानन्याङ्कृण्व मे ॥ कन्दाङ्कृष्णभानपहतमलान्सक्तुकुल्मा-  
सचुक्रैः सर्पिलैलाभ्यां समितविद्यतैः सूपमांसप्रकारैः मौद्गैश्चूर्सैर्हरितकयु-  
९ तैर्गन्धसौवर्चलाछिरद्यात्संस्कारैर्बज्जभिरपरैः साधितान्वेतराणि ॥  
मांसैः सार्धं साधयित्वास्य काण्डं पूतं हृद्यं तं रसं प्राययीत सिद्धं तद्वत्क्षी-  
रमस्मै  
१० प्रदद्याद्यूर्ध्वं वा स्याद्वैदलं तद्विमिश्रम् ॥ अथ तैलशुक्तसहितं लशुनं  
निहितं यवेषु परिलिप्य मृदा स्थितमेकमब्दमुपयुज्य नरः स ॥ १० ॥  
११ नपि जहाति गदान् ॥ त्रिरात्रमुषिता तुगौरनन्दणा यदा स्यात्तदा  
नृणार्धमुपकल्पयेत्तत्र . . . . .

Third Leaf: Obverse.

- १ . . दधिघृतानि तत्रमथ वापि तद्वाङ्मणः प्रयुज्य विविधान्गदानभि-  
विजित्य प्रसूयैर्भवेत् ॥ प्रस्थान्दात्रिंशत्लशुनरसतः  
२ किण्वमर्धार्धमस्मात् तैलप्रस्थो व्यपगतमलः पिष्टतः षड् देयाः दद्या-  
न्निक्ताद्यादपि च कलशं मेषशृङ्गाः  
३ सश्रीतं प्रस्थौ च द्वौ पुनरभिहरेत्तत्र पिष्टस्य धीमान् इति सुरेयं  
पंचपञ्चाहाद्रसवर्गगन्धैः समन्विता  
४ भवति तैलं नामतश्चेदमुन्दीरमत्यर्थकार्मुकम् तैलमेतद्यः सुरामपि वा  
पुरुषः प्रयुज्येत यत्नतः  
५ परिहरन्ति तं गदानीकान्याजौ कृतास्त्रानि वेतरे ॥ प्रस्थं पिष्ट्वा  
शोधितमेकं लशुनानाम् युज्याच्चूर्सैस्त्रैफलैरर्ध-  
६ पलिकैः सर्पिलैलाभ्यां कुडवश्चेति दशाहम् व्युष्टं कासश्वासविडं  
विघ्नमुशन्ति ॥ हन्याद्युक्तो मारुतगुल्मं पवनघ्नैः  
७ कुलं हन्याद्योजितमात्रं खदिरेण काशेश्वरौ हयगन्धायतिमिश्रः  
स्वर्यः प्रोक्तश्चैव विमिश्रो मधुयष्ट्या ॥ नानाविधानेष निहन्ति रोगान्  
८ नानाविधद्रव्यविशेषयुक्तः न यंत्रणा कुत्रचिदस्ति कल्पे यथा प्रयुक्तः  
सुखिभिः स कल्पः ॥ रसायणवरस्यास्य प्रयुक्तस्य  
९ गुणानि मत् समासतः प्रोच्यमानान्मुश्रुतै यमनाः षड्गुणं ॥ कुष्ठारो-



चकगुल्मकासकृशताश्चिचाभिसादप्रणुत् वाताहृगदरशूलशोषजठरस्त्रीहृद-  
राशोहरः

१० पक्षाघातकटियहृक्किमिगदोदावर्त्तमेहापहः तन्त्रीपीनसवाङ्मृष्टप-  
वनापस्मारसंसूदनः ॥ श्रीमान्वेणुमृदंगवल्लुगनिनदस्तप्ताग्रहेमद्युतिर्मेधाधी-  
बलवान्

११ ससंहततनर्वल्यादिभिर्वर्जितः नित्योत्साहसुतर्धिभिः समुदितैः सर्वै-  
र्हृदिरिन्द्रियैः जीवेदब्दशतं दृढानलबलः स्त्रीष्वक्षयो वा . मा .

Third Leaf : Reverse.

१ . . . . लशुनाना कल्प उक्तो मयायम् मुनिरपि च दृष्टः प्राक्तनेरेव-  
मेव प . . न . . . . प्रयुक्ता च सम्यग् . . . . पृ . . . . .

२ आहारपुष्टिधातूनां साम्यमारोग्यमेव च पुष्टिस्तेजस्तथोत्साहमायु-  
श्चैवाभिसंभवाः अभिराहारमूलस्तु पक्तिमूलाश्च धातवः धातुसाम्यात्तथारो-  
ग्यमारोग्य . पृ

३ रक्तमा पुष्ट्या तेजस्तथोत्साहः सर्वैरेतैश्च जीवितम् प्राणिनां बर्द्धते  
तस्मादग्निमादौ परीक्षयेत् धातुसाम्यात्मनः प्रोक्तः स वै श्रेष्ठः प्रकीर्तितः  
~ विषमे दाधिकं सर्पिः पिवेद्वा हवुषादिकम्

४ स्निग्धोष्णा वर्त्तयस्त्रेष्टास्तथा पानाशनानि च मन्दे तु लंघनं पूर्व  
पश्चात्पाचनदीपनम् चूर्सारिष्टप्रयोगाश्च हृिताः पित्तकफापहाः यथा-  
साध्यं प्रयोक्तव्यं समे ग्रौ भिषजाभिति ~ भव-

५ ति चात्र ~ मन्दे तीक्ष्णे च म्रियते विनोपकरणैरः विषमे रोग-  
बाहुल्यं समे जीवेच्चिरं सुखी तस्माद्रोगेषु सर्वेषु सर्वकालेषु बुद्धिमान्  
अग्निमूला क्रिया

६ कार्या पश्चादामयशान्तये ॥ स्वरसेन शंखपुष्ट्या ब्राह्मी मण्डूकर्पासि-  
मधुकानाम् मेधारोग्यबलार्थी जीवितुकामः प्रयुंजीत मासेन तु मेधावी  
घण्टासाच्छ्रुतधरो भवत्य-

७ जरः जीवति वर्षसहस्रं समा प्रयोगाच्छ्रुतद्वयं विधिवत् एवं परतः  
परतः प्रयुंजमानो भवत्यजरः ॥ . . . . ॥ ॐ

- ८ यवागूखडयूषेषु लेहचूर्णागदेषु च गुडिकांजनवर्त्तसु धूमप्रठमनेषु  
च पुटपाकतर्पणस्वेदनावमनाश्च्योतनेषु च
- ९ अन्येषु चाप्यनुक्तेषु यत्र भागो न कौर्त्तितः द्रव्याणां समभागः स्या-  
द्विगुणे मधुसर्पिषी त्रिगुणं तु गुडं दद्यात्सिताचूर्णं चतुर्गुणम् पेष्येषु य-
- १० त्र नोद्विष्टं द्रवन्तत्र जलं मतम् दधिमूत्रपयःसर्पिरोमशृङ्गसफेषु च  
गव्यं प्रकल्पयेत्सर्व्वं मधूनां मात्तिकोद्भवम् ॥ दाडिमत्वचया
- ११ सार्धं कटुतैलं विपाचयेत् कसौर्भगोष्ठौ लिंगश्च सर्व्व एतेन वर्धति ॥  
चित्रकार्धपलं मूलान्निवृत्तातलयोस्तथा
- १२ . . . . . दन्तिमूलानां कर्षं कर्षं पृथक्पृथक् पिप्पल्याः सैन्धवाच्चैव तथा  
हिङ्गवल्लवेतसात् विंशतिश्चाभया मुख्या

Fourth Leaf: Obverse.

- १ . . . . . [वि]प[ा]चयेत् गुडस्याष्टपलात्सत्यक्कुर्वीत दशमोदकान् एकैकं  
भक्षयेत्तस्माद्दशमे दशमे हनि दोषाणां पाचनार्थाय जलमुष्णं पिवेदनु  
विरेकान्ते ततः खात्वा साढ्य-
- २ . . . . . प्रयोजयेत् नात्र कश्चित्परीहारो वाक्कायमनसां सदा सर्व्वर्तुको  
नरेन्द्राणां विरेको गस्तिनिर्मितः जरामृत्युप्रमथनः सर्व्वामयविनाशनः  
दृष्ट्यो रसायनश्चैव
- ३ मेधारोग्याभिवर्धनः नापुत्राय प्रदातव्यो नाग्निध्याय कथञ्चन राज-  
द्विष्टे न दातव्यो ये चान्ये पापचारिणः ॥ द्वे पञ्चमूले मधुक गुडूची रास्ना-  
श्वगन्धामरदारु पाठा त्वचं ब-
- ४ ले द्वे तगरन्तिलाश्च मूर्त्वा कुलत्यान्नलदं घनञ्च पुनर्नवां वेणुफलत्वचं  
च जीवंत्यथैलागुरुजीवकश्च एरण्डमूलं सफलप्ररोहं कुरण्डपुष्पाणि
- ५ महौषधं च द्वाभ्यां त्रिभिर्वा कथितं सतोयमाजं पयो गव्यमथाविकं  
वा ससैन्धवं किञ्चिदतः सुखौष्णमाश्च्योतनं वातकृते क्षिरोगे ॥ दार्ढ्यत्पलं प-
- ६ द्भक्तुंगयाषामेदामृणालं मधुकं समंगा कालीयकं पर्पटका लता च  
द्राक्षाथ कार्धर्पण्यकं च मूलानि गुन्धानडवेतसानां शुंगानि चापुष्पवतां  
दृष्ट्या-

- ७ नाम् प्रपौण्डरीकं सकिराततिक्तं भद्रश्रियं निम्बपटोलवाणाम् द्वौ  
त्रीणि वाजे पयसि स्त्रिया वा श्रितान्यथाश्चोतनमुत्तमं स्यात् सशर्करं  
मात्तिकसंप्रयुक्तं पैत्ते क्षि-
- ८ रोगे रुधिरात्मके च ॥ त्रीणूषणानि त्रिफला हरिद्रकासीसजाती-  
गृहधूमजात्यः लाक्षाथ दंती सुरसो वचा च पाठाश्वगन्धामरदारु चाय्यम्  
सकटलैलागुरुकण्ट-
- ९ कारी रोध्रं करञ्जं वृहतीं श्वदंष्ट्राम् द्वे त्रीणि वातः सलिले श्रितानि  
कोष्णानि कार्याणि ससैन्धवानि आश्चोतनं श्लेष्मकृते क्षिरोगे मधुप्रगाढं  
प्रवदंति संतः परूष . ामा-
- १० तकतिन्तिडीकटुक्षाम्लजंत्वाम्नामपित्तकोलैः समातुलुंगैश्च दाडि-  
माम्ब्लैर्मदैः पयोभिर्दधिमस्तुना वा दार्युत्यलाद्यैः क्वाथितैश्च साम्ब्लैराश्चोतनं  
सैन्धवसं . . .
- ११ . न्यासशीतोष्णकृतं निहन्ति रक्तात्मिकां नेत्ररुजं प्रसङ्ग्य संसर्गजे  
सर्वसमुत्थिते वा हीनाधिकत्वं प्रसमीक्ष्य रोगे कुर्वीत □ . □ . . . . .

## Fourth Leaf: Reverse.

- १ . पण्डरी विविचः ॥ एरण्डमूलं सफलप्ररोहं विजर्जरं क्षीरयुतं  
त्वजानाम् स्याद्वातरक्तापहमेतदय्यमाश्चोतन . ण्णजो वदत ॥ प्रपौण्डरक  
मधुक हरिद्रा क् . . . . .
- २ आश्चोतनं शर्करया विमिश्रं पित्तानिलात्तिं विनिवर्त्तयेत् ॥ नतं  
श्वदंष्ट्रा वृहती त्वचश्च क्रीवेरमित्येष षट्स्त्वजानाम् क्षीरोदकैः सैन्धव-  
संप्रयुक्तमाश्चोतनं वातकफापहं स्य .
- ३ दार्या मधुकं च मुख्यं गथे पयस्याक्तथितः स्त्रिया वा आश्चोतनो  
मारुतरक्तपित्ते सशर्करः सद्भिषजा विधेयः ॥ चूर्माणि सूक्ष्माणि फलत्रयस्य  
बध्वा सिते क्षौमपटैकदेशे आजे . . स्य-
- ४ गनया जले वा परिप्लुतं सर्वरुजापहं स्यात् ॥ दाब्बीं हरिद्रां  
त्रिफलां समुस्तं सशर्करं मात्तिकसंप्रयुक्तम् आश्चोतनं मानुषदुग्धयुक्तं  
पित्ताखवातापहमय्यमुक्तम् ॥ एरण्डमूलैस्त-

- ५ रणैः सपत्रैः कक्षैरथो षष्टिकतण्डुलानाम् घृतासुतं श्रावकरप्रलिप्तं  
पूर्वेण कल्पेन रुजापहं स्यात् ॥ स्वेदपुटपाकनाबनतर्पणघृतपानलेपपरि-  
धेकान् आश्र्योतन-
- ६ निर्दिष्टैर्द्रव्यैरेतैः प्रकल्पयेत् भिषक् ॥ ऋतुव्याधिहिताभीलुयंग-  
नीलीकनाशनान् विषशोथापहंश्चैव मुखलेपान्प्रचक्षते ॥ त्वक्क्षीरिणां  
चन्दनपद्मकौ च गुन्द्रां मृ-
- ७ गालं घनवालकौ च मूलं कुशानां तगरैलवालुतालीसपत्रं नलदं ति-  
लाञ्च मसूरदृष्ट्वाभयवं मृगालं रसञ्च यष्टीमधुकोत्पलानाम् शैलेयमुस्तागरु
- ८ भामकञ्च स्थौनैयकैलातगरं तिलाञ्च त्वक्कुत्रकुठागरुभामकञ्च मांसीं  
हरेणुं परिपेलवञ्च यष्टिकरोध्रागरुचन्दनञ्च पुनर्नवाकृष्णतिला लता च  
इत्यर्ध-
- ९ रूपैर्वदनप्रलेपैः कालेषु घर्मादिषु संप्रयोज्यः ॥ निदर्शिता दृष्टिहिता  
नराणां दोषापहान्मे ष्ट्यु चोच्यमानान् वातामयघ्ना जलदागमोक्ताः पित्ता-
- १० मयघ्नाः शरदि प्रदिष्टाः ग्रीष्मोपदिष्टा रुधिरामयघ्नाः कफामयघ्नाः कु-  
सुमागमोक्ताः कर्पासमूलान्यलतामुशीरकालीयका क्षीरवतां त्वचञ्च भद्रश्चि-
- ११ . . . . . कां यवाञ्च वदन्ति वर्णान्वदनप्रलेपान् एतानि मूत्रेण गवां  
प्रशोष्य कोलाग्नमूत्रैः सह मिश्रिता वा स्युर्मातुलुंगस्य रसे युता वा  
ससर्षपाः शोष्य

Fifth Leaf: Obverse.

- १ . . . . . कासु क्लृप्तं च दुष्टं रुधिरं च मुक्तं ख .  
वरेके विविधे च नास्ये कृता विधेया वदनप्रलेपाः त्वक्कुत्रमांसीगतचन्दनं च  
मनःशिला व्याघ्र
- २ . . . . . मू . क्लृप्तं कुष्ठं सुरसे हरिद्रे विषापहः स्युर्वदनप्रलेपाः ॥  
मूर्वाश्वगन्धा त्रिफला करञ्जं शोथापहः स्युर्वदनप्रलेपाः ॥ मूर्वापि गोमूत्र-  
युतां वदन्ति शोथापहं
- ३ ॐ वदनप्रलेपम् ॥ मुखे प्रलिप्ते न हसेन्न रुद्यात्स्वप्नं न सेवेत तथा  
न चाद्यात् नाभौ प्रतप्येन्न च धारयेत् शुष्कं प्रलेपं वदने मनुष्यः अभीलु-  
नीलीकमथापि



- ४ कुलं व्यंगं सपित्तं तिलकांश्च जन्तोः श्राम्यन्ति सद्यो वदनप्रलेपादृष्टिश्च  
वक्तव्यं भवेत्प्रसन्नम् ॥ मुखे प्रलिते हसतो श्रतो वा स्नेहा सहायः
- ५ स्वपतः प्रकोपः यात्याशु तस्माच्छिरसो विरेकाः स्नेहाश्च धूमाश्च पुनः  
प्रयोज्याः अग्निप्रतापादिद्रुतश्च जंतोर्धृते च शुष्के वदनप्रलेपे अभौलु-
- ६ पूर्वान्प्रवदन्ति रोगांस्तेषां यथोक्तां विदधीत श्रान्तिम् नक्तान्वतैमि-  
र्यग्निरौर्त्तिदाहं पित्तात्मिकां चक्षुरजां सदाहाम् दोषास्तथान्ये पि मुख-  
त्वचस्थाः श्राम्यन्ति सद्यो
- ७ वदनप्रलेपात् अक्ष्णोर्विकारे कफमारुताभ्यां नस्तःकृते पीनसरोगिणां  
च हनुग्रहे शीर्षरुजासु चैव वदन्ति वर्ज्यान्वदनप्रलेपान् अंगुलस्य चतुर्भागो
- ८ मुखलेपो विधीयते मध्यमस्तु त्रिभागः स्यादन्य . . . . . भवेत् यष्टि-  
ङ्गरोध्रां त्रिफला मृणालं सितोपलां कांचनगैरिकश्च पत्रत्वगेलागुरु देवदारु  
पुनर्नवा व्याघ्रनखां-
- ९ जनश्च मनःशिलां वृहती त्वचश्च मांसीहरेऽ . . . पेक्षवं च सौवीरकं  
गैरिककटुकं च स्याच्छारिवा प्रकर्षया विमिश्रा इत्यर्धरूपश्चतुरः प्रदिष्टाः  
कफाखपिपा . . .
- १० रोगशान्तौ विडालकैस्त्रैर्नयनं समन्तादापक्षमूलात्प्रदिहेद्बहिर्व्या रो-  
धश्च किंचित्तु घृतेन दिग्धमयोविष्टुमभयामयोवा त्वचं वृहत्याः समम-  
ञ्जन . . .
- ११ लकः सर्वरुजापहः स्यात् गैरिकरसांजनंजनमनःशिला रीतिकुसुम-  
समभागाः ईषन्मरिचसह्यया द्विगुणं ॐ . . . . .

## Fifth Leaf : Reverse.

- १ मरिचकुसुमे च हरितं विपचेन्मृदग्निना घृतसह्ययम् अंजनविडा-  
लको यश्च कुल्वं वक्ष्याम . . . ॥ . . . . .
- २ प्रोच्यमानं निबोधत रसदोषाद्यवायाच्च पित्तशोणितदूषणात् भव-  
त्यकालपलितं वृद्धस्य जरसा भवेत् प्रायेण स्नेहला नार्याश्वया  
श . . . . .
- ३ निषेविण्यो रजो दुष्टं सृजन्ति च प्रसन्नरक्तपित्तोष्माक्षेभूमिरतः

स्त्रियाः न चवंति ततः केशास्तस्मादखलिताः स्त्रियः पुंसामतो विपर्यासे  
रक्तपित्तं प्रदुष्य . . . .

४ न्केशमूलानि खलतिं कुरुते शिरः ॥ निष्केशं ताम्रबालञ्च खालित्यं  
यच्चिरोस्थितम् न तस्मिद्यति साध्यन्तु नवं सम्यगुपाचरेत् खालित्यपलिते  
पूर्वं बज्जशो वेधयेत्सिराः

५ दुष्टशोणितशुद्धस्य वमनादिक्रिया हिता यथो . . . . पञ्चाङ्कुद-  
कोष्ठः प्रयोजयेत् तैलथोगांश्च विविधान्केशरागांस्तथैव च केशसंजननांश्चैव  
तथा संवर्द्धनानि च

६ प्रक्षालनाञ्च केशानां यथा दोषहरा हिताः ॥ ७ ॥ स्वादम्ललवणो-  
पेतैर्धृतैर्मासतकासिनम् सान्नैरुपाचरेद्धौमान्क्वेवलैर्वा यथाबलम् ग्राम्यानूपो  
दकरसैः सगुडैः सप-

७ लाण्डुभिः अम्लस्निग्धोष्णमधुरैर्भाज्या गोधूमशालयः सुरां समखां  
घर्माभिरसान्वापि प्रकामतः वातकासे बज्ज स्नेहं सगुडं वा पयः पिवेत्  
भृङ्गवेरं षड्बीजा-

८ क्षाण्डङ्गीपिप्पलिभार्गिभिः गुडतैलयुतो लेहो हितो मासतका-  
सिनाम् पिप्पली मासताजाजीषडीपुष्करचित्रकैः ससैन्धवमिदं चूर्णं हितं  
मासतकासिनाम्

९ पलानि क्वाथयेत्त्रिंशत्कण्टकार्या जलाढके चतुर्भागस्थिते पूते दद्या-  
द्गुडपलान्यगे चूर्णैर्नागरभार्ग्येणापिप्पलीषड्विचित्रकैः घृततैलपलैश्चापि

१० संयतं लेहवत्पचेत् चतुर्भिः घनीभावाच्छीते च द्विपलं मधु पिप्पली-  
पलचूर्णं च दत्वा लिह्यात्तु कासनत् ॥ दशमूलकषायेण भार्गीकल्कं घृतं पचेत्

११ . . . . . ० वातकासनत् कण्टकार्या रसप्रस्थे घृतस्य कुडवं  
पचेत् पुनर्नवायाः कल्केन तत्परं वातकासनत् भार्गीकल्कं घृतं चाथ  
पचेद्द्वि चतुर्गुणे

१२ वाघीरसद्विगुणितं वातकासहरं परम् पैत्तिके सर्पिषः पानं हितं  
स्यात्सर्वरेचनम्

## TRANSLITERATION.

## First Leaf : Reverse.

- 1 Ôṃ <sup>1</sup>Dêv-arshi-siddha-gaṇa-kinnara-nâga-yaksha-vidyâdhar-âdhyu- 1  
shita-sânur=ananta-ratna(h)[1] punyas=tripishṭapa-tal(-âmbri)ta-  
dêva-ramyaḥ[— — — — —]
- 2 n=udagraḥ ||[1 ||] Yatra sphuṭan-maṇi-sahasra-mayûkha-jâla-vikshô- 2  
bhitam daśasu dikshu bhayât=(pra)līnam[1] chandr-ôdra<sup>2</sup>-sûrya-  
hutabhuñ-nīlay-âbhiśa[û]ka[m] pr[â]vri[d-ni]-
- 3 śâsv=api punar=n=na tamô bhyupaiti ||[2 ||] Yaḥ sêvyatê muṇi-gaṇair= 3  
anīsam sa-śishyair=n=naikair samit-kuśa-phal-ôdaka-pushpa-has-  
taiḥ [1] svargg-âṅganâbhir=api cha pravimṣiṣṭa-śâkhâḥ
- 4 kuṃjêshu yasya taravaḥ kusum-ârthiniḥ [3 ||] Yatra trilôchana- 4  
jâtâ-mukut-âika-dêsa-nitya-sthit-ôdu-pati<sup>3</sup>-didhiti-samprayôgât [1]  
sôtan<sup>4</sup>=divâ=pi himavat-sphaṭik-ôpalâbham=abdai-<sup>5</sup>
- 5 ndukânta-manayaḥ pravaram sravanti ||[4 ||] Yasy=âbda-mukta-jala- 5  
dhanta-silâ-talêshu kuṃjêshu naika-vidha-vî-gaṇa-nâditêshu [1]  
ramyêshu pushpa-phala-da-druma-saṃka-
- 6 têsḥ râtrau hutâśana-vad=aushadhayô jvalamnti<sup>6</sup> ||[5 ||] Chandr- 6  
âṃśu-gauratara-kêśara-bhâra-bhridbhir=matt-êbha-mastaka-taṭa-  
kshataj-ôtkshit-âṃśair [1] simhaiḥ śil-ôchchaya-guhâ-vadanâ-
- 7 ṭṭahâśair=n=na kshamyatê mbudhara-vrinda-ravô pi yatra ||[6 ||] Tas- 7  
min=girâv=avani-maṇḍala-maṇḍa-bhûtê sarvv-âtithauv<sup>7</sup>=iva jagad-  
vibhava-pradânair [1] sarvv-artu-pushpa-phalavad-druma-ramya-
- 8 sânv=êtê vidhûta-tamasô munayô vasanti ||[7 ||] Âtrêya-Hârīta- 8  
Parâśara-Bhêla-Gargga-Sâmbavya-Suśruta-Vasishṭha-Karâla-Kâ-  
pyâḥ [1] sarvv-aushadhî-rasa-gaṇ<sup>8</sup>-âkṛiti-vîrya-nâma-
- 9 jijñâsavaḥ samuditâḥ śataśaḥ prachêruḥ ||[8 ||] <sup>9</sup>Dṛiṣṭvâ patirair= 9  
harita-haritair=indranîla-prakâśair kandair kunda-sphaṭika-ku-  
mud-êndvañsu-saṃkh-âbhra-śubhair [1] utpann-âsthô
- 10 m[u]nim=upagataḥ Suśrutaḥ Kâśirâjaḥ kinnv=êtat=syâd=atha sa 10  
bhagavân=âha tasmai yathâvat ||[9 ||] <sup>10</sup>Pur=âmṛitam pramathitam  
=asur-êndraḥ svayam papau [1] tasya chichchhêda bhagavân=u-

1 Metre of verses 1—8 : Vasantatilaka.

2 Read êndra.

3 Read êndu-pati.

4 Read śrotan or śîtan.

5 Read abdê.

6 Read jvalanti or jvalamti.

7 Read âtithâv=iva.

8 Read gaṇa, as in verse 13.

9 Metre : Mandâkrântâ.

10 Metre of verses 10 and 11 : Ślôka.

- 11 ttamâṅgaṃ Janârdanaḥ || [10 ||] Kaṇṭha-nâḍi samâsannâ viechhinnê 11  
 tasya mûrdhani [1] vindavaḥ patitâ bhûmâv=âdyaṃ tasy=êha janma  
 tu || [11 ||]

## Second Leaf: Obverse.

- 1 <sup>11</sup>Na bhakshaya[m]ty=ēnam=ataś=cha viprâḥ śarîra-samparkka-viniḥ- 12  
 sritatvât [1] gandh-ôgratâm=apy=ata ēva ch=âśya vadaṃti śâstr-  
 âdhigama-pravîṇâḥ || 12 || <sup>12</sup>Lavaṇa-rasa-viyôgâd=âhur=ēnam rasû- 13  
 na(m)
- 2 laśuna iti tu samjñâ ch=âśya loka-pratitâ [1] bahubhir=ihā kim= 14  
 uktair=d=dêśa-bhâśh-âbhidhânaiḥ śrîṇu rasa-guṇa-vîryâny=asya  
 ch=aiv=ôpayôgât || [13 ||] <sup>13</sup>Rasê cha pâkê cha kaṭuḥ pra- 14
- 3 dishṭaḥ pâkê tathâ svâdur=udâhritô nyaḥ<sup>14</sup> [1] laghuś=cha gandhêna 15  
 sa-durjjar-âśra-vîryêṇa ch=ôśhṇaḥ prathitaś=cha vṛishyaḥ || [14 ||]  
<sup>15</sup>Âṃbl-ôśhṇa-snêha-bhâvât=pavana-bala-haraḥ 15
- 4 prôktô muni-vṛishaiḥ <sup>16</sup>mâdhuryât=pitta<sup>17</sup>-bhâvâd=api cha sa rasatayâ 16  
 pitta-praśamanaḥ [1] aushṇyât=taikshṇyât=kaṭutvât=kapha-bala-  
 vijayâ vidvadbhir=uditāḥ sarvân=rôgân=nibhanyâd=iti
- 5 vidhi-vihitô dôsha-traya-haraḥ || [15 ||] <sup>18</sup>Pavanaṃ vinihamty=api ch 17  
 =âsthi-gataṃ kapham=apy=achirâd=uditam śamayêt [1] janayêt=  
 api ch=âgni-balam prabalam bala-varṇṇa-karaḥ prava-
- 6 raś=cha mataḥ || [16 ||] <sup>19</sup>Atha bahu-vidha-madya-mâmsa-sarpir-yava- 17  
 gôdhûma-bhujâṃ sukh-âtmakânâm [1] ayam=iha laśun-ôtsavaḥ  
 prayôjyô hima-kâlê cha madhau cha mâdha-
- 7 vê cha || [17 ||] <sup>20</sup>Tyajyamtê kâminîbhir=jayana-samuchitâ yatra kânchî- 18  
 kalâpâḥ hârâḥ śaitiân=na vakshas-tana-taṭa-yugal-âpîḍanât=sam-  
 prayâṃti [1] kâṃtâ n=ēndv-añśu-jâla-vyatikara-subhagâ-harmya-
- 8 prishṭh-ôpabhôgâḥ kâlê tasmin=prayôjyô hy=aguru bahu-mataṃ 19  
 kuṃkum-âṃkâś=cha yatra || [18 ||] <sup>21</sup>Harmy-âgrêshv=atha tôra-

<sup>11</sup> Metre: Viparîtâkhânakî, alternate Indravajra (2nd pâda) and Upêndravajra (1st, 3rd and 4th).

<sup>12</sup> Metre: Mâlinî.

<sup>13</sup> Metre: Viparîtâkhyânakî, alternate Upêndravajra (1st and 3rd pâdas), and Indravajra (2nd and 4th pâdas).

<sup>14</sup> Read *anyaiḥ*.

<sup>15</sup> Metre: Suvadanâ.

<sup>16</sup> This pâda does not scan; there are also other difficulties; see note to translation; it scans, if *sa* be omitted.

<sup>17</sup> Perhaps read *tikta*.

<sup>18</sup> Metre: Tôṭaka.

<sup>19</sup> Metre: Aupachchhandasika.

<sup>20</sup> Metre: Sragdharâ.

<sup>21</sup> Metre: Sârdûlavikrîḍita.



ṇēshu valabhī-dvārēshu ch=āvishkṛitāḥ kand-ādhyā laśuna-srajō  
virachayēd=bhūmau

- 9 tath=aiv=ârchchanam [1] mālās=tat-parichâarakasya cha janasy=ârō-  
payēt=tan-mayîr=ity=asy=aisha vidhir=j=janasya vihitāḥ svalpō  
vamânām=ataḥ ||[19 ||] <sup>22</sup>Atha śuddha-tanuḥ suchir-v-vivi(kta)ḥ 20
- 10 sura-viprân=pratipûjya pâvakam cha [1] laśunât=svarasam paṭ-  
âpta-pûtam prapivēd=ahni śubha-grah-arksha-yuktê ||[20 ||] ku- 21  
ḍavam kuḍavâd=ath=âpi ch=ârdham kuḍavam sârdham=atō pi v=  
âti[mâtram]

### Second Leaf: Reverse.

- 1 niyatâ na hi kâchid=atra mâtṛâ prapivēd=dōsha-bal-âmayâni dṛiṣṭvâ  
||[21 ||] <sup>23</sup>sa-tâlavri[nta]-(vya)jan-ânil(ai)ḥ (śubh)[ai](ḥ)(pa)van- 22  
tam=(ê)na[m] samabh[i](s)prîś[ê]ch=chhan[ai](ḥ) [1]
- 2 bhavê(d=n)<sup>24</sup> mûrchchhâ=pi vatō pi vâ yadi sprîśêt=tataḥ śîta-jalaiḥ  
sa-chandanaiḥ ||[22 ||] <sup>25</sup>surâ-tritiy-âṃśa-vimûrchchhitasya gaṇ- 23  
ḍûsham=êkam prapivēd=rasasya [1] pûrvvam gala-k-kr(i)ḍ(i)-  
v(i)[dhâna]-
- 3 hêtôḥ sthitvâ muhûrttañ=cha pivêt=sa-śēsham ||[23 ||] <sup>26</sup>tasmiñ=jîrṇṇē 24  
kshîra-śâly-ânnâ<sup>27</sup>-bhuk=syât kshîr-âyôjyô jâṃgalânâṃ rasair=v=  
vâ [1] hṛidyair=yûshaiḥ saṃskṛitair=v=vaidalair=v=vâ yuktaḥ snê-  
hair=mâtray=aikam cha
- 4 kâlam ||[24 ||] <sup>28</sup>pivên=mârdvikam vâ madhu madhu-sam-âṃśâch= 25  
chha<sup>29</sup>-madirâm arishtaṃ śîdhum vâ jagalam=agajam mairêyam=  
api vâ [1] atō nyad=vâ madyam bhavati guṇavad=yat=tat=sa-sali-  
lam pivēd=êkaikam vâ na
- 5 bhavati yathâ madya-vyatikaraḥ ||[25 ||] <sup>30</sup>a-madya-paḥ sukh-ôdakam 26  
pivêt=tath=âmbala-kâṃchikam [1] Tush-ôdakam suvîrajam pivêch

<sup>22</sup> Metre of verses 20 and 21: Aupachchhandasika.

<sup>23</sup> Metre: Vamśasthavila. The verse is much mutilated, and has been restored conjecturally with the aid of the metre. After *chhanaiḥ*, the leaf must have been broken off originally, before it was written on; for as the metre shows, there can have been no more writing in the first line.

<sup>24</sup> The akshara *du* is not distinct; possibly it might be *ttu* (*bhavêt = tu*).

<sup>25</sup> Metre: Viparîtâkhyânakî, alternate Upēndravajra (1st pāda) and Indravajra (2nd, 3rd and 4th pādas).

<sup>26</sup> Metre: S'âlinî.

<sup>27</sup> Read *śâly-anna*.

<sup>28</sup> Metre: Sudhâ.

<sup>29</sup> As the metre shows, there is here one long syllable wanting. I would propose to read *amśâch = chhâta*, i. e., *amśât = śâta* (or perhaps *śânta* or *chhâta*).

<sup>30</sup> Metre: Pramânikâ.

- =cha mastu yach=chhubham ||[26 ||] <sup>31</sup>aa guḍēna kathañ-chid= 27  
 ênam=adyân=na tath=âmañ=cha jalam pivê-
- 6 t=prayujan<sup>32</sup> ||[1] satatañ=cha bhavêd=ajîrṇa-śamki na cha khâdêd=a- 28  
 bahûni vâsarâṇi ||[27 ||] <sup>33</sup>Atha kandâñ=ch=chhubhâñ=ch=chhlaksh-  
 ṇân=pishtân<sup>34</sup>=sarpiś=cha tat-samam ||[1] khajên=âbhipramathy=  
 aitatad=êkadhyam ghṛita-bhâjanê ||[28 ||]
- 7 Vyushṭam daśâhât=prabhṛiti bhakshayêd=bilva-sammitam ||[1] jîrṇê 29  
 cha rasa-kalp-ôktam=âhâra-vidhim=âcharêt ||[29 ||] dvâv=apy= 30  
 êtâv=abhihitau kalpau prâgra-harau mayâ ||[1] anayôr=yatnavâ-
- 8 n=n=âsyât=kalpân=anyâñ=ch=chhṛiṇushva mē ||[30 ||] <sup>35</sup>Kandâñ=ch= 31  
 chhañkh-âbhân=apahṛita-malân=saktu-kulmâsa-chukraiḥ sarpis-  
 tailâbhyam samita-vikritaiḥ sûpa-mâṃsa-prakâraiḥ ||[1] maudgaîś  
 =chûrṇair<sup>36</sup>=haritaka-yu-
- 9 tair=g=gandha-sauvarchchal-âdhyair=adyât=samskârair=bahubhir= 32  
 aparaiḥ sâdhitân=v=êtarâṇi ||[31 ||] <sup>37</sup>Mâṃsaiḥ sârdham sâdhayitv= 32  
 âsya kâṇḍam pûtam hṛidyaṃ tam rasam pâyayîta ||[1] siddham  
 tat-vat=kshîram=asmai
- 10 pradadyâd=yûsham vâ syâd=vaidalam tad-vimiśram ||[32 ||] <sup>38</sup>Atha 33  
 taila-śukta-sahitam laṣunam nihitam yavêshu parilipyâ mṛidâ ||[1]  
 sthitam=êkam=abdham=upayujya naraḥ so o i o e o i o [â].<sup>39</sup>
- 11 n=api jahâti gadân ||[33 ||] <sup>40</sup>Tri-râtram=ushitâ tug=aurana-nṛiṇâ<sup>41</sup> 34  
 yadâ syât=tadâ nṛinâ=rdham=upakalpayel=laś[una] [- - - -  
 -] ||[1]

<sup>31</sup> Metre : Aupachchhandasika.

<sup>32</sup> Read *prayunjan*, as shown by the metre.

<sup>33</sup> Metre of verses 28—30 : S'lôka.

<sup>34</sup> This is a curiosity ; the final *n*, which should be properly conjunct with the initial *s* of *sarpiś*, is attached to the head of the subscribed *ta* of *piśṭa*, because the big akshara in the line, just above, interfered with the proper writing of the conjunct *nsa*.

<sup>35</sup> Metre : Kusumita-latâ-vellitâ.

<sup>36</sup> Here, as the metre shows, one long syllable is wanting.

<sup>37</sup> Metre : S'alini.

<sup>38</sup> Metre : Pramitâksharâ.

<sup>39</sup> Here five syllables are lost, which, as shown by the metre, should be *— — — — —*. The first syllable must be either *su* or *sa*; of the following three syllables the vowels (*i*, *e*, *i*) are preserved; of the 5th syllable the vowel must be *â*, to make up an accusative plural, ending in *ân* and agreeing with *gadân*. The phrase should have some such meaning as "obstinate" or "long enduring" (disease); *su-chire sthitân* may be suggested.

<sup>40</sup> Metre : Prithvî.

<sup>41</sup> Read *tug-ârata-nṛiṇâ* (for *tugâ arata-nṛiṇâ*) (?)

## Third Leaf: Obverse.

- 1 [—] (dadhi)-ghṛitāni takkram=athav=āpi tad=brāhmaṇaḥ pray-  
ujya vividhān=gadān=abhivijitya (śmarshmī) bhavēt || [34 ||] 35  
<sup>42</sup>Prasthān=dvātriṃśal=laśuna-rasataḥ
- 2 kṇvam=ardh-ārdham=asmāt taila-prasthō vyapagata-malaḥ pishṭa-  
taḥ shaṭ=cha dēyāḥ [1] dadyān=nikvāthād=api cha kalaśaṃ mēsha-  
śṛiṅgyāḥ
- 3 sa-śītaṃ prasthau cha dvau punar=abhiharēt=tatra pishṭasya dhīmān  
[ || 35 ||] <sup>43</sup>iti sur=ēyaṃ paṃcha-pañch-āhād=rasa-varṇṇa-gan-  
dhaiḥ samanvitā Prose.
- 4 bhavati tailaṃ nāmataś=ch=ēdam=undīram<sup>44</sup>=atyartha-kārmukam  
tailam=ētaḍ=yaḥ surām=api vā puruṣaḥ prayujjīta yatnataḥ
- 5 pariharamīti taṃ gad-ānīkāny=ājau kṛit-āstrāni<sup>45</sup> v-ētarē || <sup>46</sup>Pras- 36  
thaṃ pishṭvā śōdhitam=ēkaṃ laśunānām yujjyāch=chūrṇais=  
traiphalair=ardha-
- 6 palikaiḥ [1] sarpis-tailābhyāṃ kuḍavaś=ch=ēti daśāha(m) vyusṭhaṃ  
kāsa-śvāsa-vidāṃ vighnam=uśanti || [36 ||] Hanyād=yuktō mā(ru)ta- 37  
gulmaṃ pavana-ghnaiḥ
- 7 kushṭhaṃ hanyād=yōjita-mātraṃ khadirēṇa [1] kāśyēśhasnō<sup>47</sup> haya-  
gandhā-vyatimīśraḥ svaryaḥ prōktaś=ch=aisha vimīśrō madhu-  
yashṭyā || [37 ||] <sup>48</sup>nānā-vidhān=ēsha nihamīti rōgān 38
- 8 nānā-vidha-dravya-viśēsha-yuktaḥ [1] na yamtraṇā kutra-chid=asti  
kalpē yathā prayuktaḥ sukhibhiḥ sa kalpaḥ || [38 ||] <sup>49</sup>Rasāyana- 39  
varasy=āsyā prayuktasya
- 9 guṇāni mat [1] samāsataḥ prōchyamānān=Suśrutai<sup>50</sup> gra-manāḥ śṛiṇu ||  
[ 39 ||] <sup>51</sup>kushṭh-ārōchaka-gulma-kāsa-kṛisatāśchitr<sup>52</sup>-āgnisāda- 40  
praṇat vāt-āṣṛigdara-śūla-śōsha-jāṭhara-plihōdar-ārśō-haraḥ [1]

<sup>42</sup> The metre of verse 35 is a mixture of alternate Kusumitalatāvellitā and Mandākrantā. I cannot discover its specific name.

<sup>43</sup> The following appears to be prose, thought it consists of two parts, each of thirty-nine syllables.

<sup>44</sup> Read *udīrṇam*.

<sup>45</sup> Read *kṛitāstrāni*.

<sup>46</sup> Metre of verses 36 and 37: Mattamayūra or Mâyā. But the 2nd pāda of verse 36 does not scan and is short by one syllable; also the 3rd pāda of verse 37 is disfigured by a clerical error.

<sup>47</sup> Read *kāsaśvāsaghnō*, as shown by the metre.

<sup>48</sup> Metre: Ākhyānakhī, a combination of Indravajra (first two pādas) and Upēn-dravajra (last two pādas).

<sup>49</sup> Metre: Ślōka.

<sup>50</sup> Read *suśrutē*.

<sup>51</sup> Metre of verses 40 and 41: Śārdūlavikṛīḍita.

<sup>52</sup> Read *kṛisā-bhāś-chitra*; *t* and *bh* are two consonants of very similar form.

- 10 pakshâghâta-kaṭigraha-krimigad-ôḍâvartta-mêh-âpahah tandri-pîna-  
sa-vâhu-prishṭa-pavan-âpasmâra-samsûdanah ||[40 ||] śrî-mân= 41  
vênu-mṛidamga-valgu-ninadas=tapt-âgra-hêma-dyutir=m=mêdhâ-  
dhî-balavân
- 11 s(u)-samhata-tan(u)r=valy-âdibhir=varjitah [I] nity-ôtsâha-su-tar-  
dhibhih<sup>53</sup> samuditaiḥ sarvvair=d=ḍṛidhair=indriyaiḥ jivêd=abda-  
śatam ḍṛidh-ânala-balah strish(v)-akshayô vâ [pu](mâ)[n] || 41 ||

## Third Leaf: Reverse.

- 1 <sup>54</sup>[UUUU](laśunâ)nâ[m] kalpa uktô may=âyam munir<sup>55</sup>=api cha 42  
ḍṛishṭah prâktanair=êvam=êva [I] pa[UUUU]---[pr]-  
yunktâ[m] cha samyang=[UUUU]ori[U]ôuyô[---U---  
U--- || 42 ||]
- 2 <sup>56</sup>Âhâra-pushtî<sup>57</sup>-dhatûnâṃ sâmyam=ârôgyam=êva cha [I] pushtis= 43  
têjas=tath=ôtsâham=âyus=ch=aiv=âgni-sambhavâḥ || 43 || agnir= 44  
âhâra-mûlas=tu pakti-mûlâś=cha dhâtavah [I] dhātu-sâmyât=tath  
=ârôgyam=ârôgy[ât]=pu[sh]t[i]-
- 3 r=uttamâ || 44 || pushtyâ têjas=tath=ôtsâbah sarvvair=êtaiś=cha jîvi- 45  
tam [I] prâṇinâṃ barddhatê tasmâd=agnim=âdau parikshayêt  
|| 45 || Dhātu-sâmyât=samah prôktaḥ<sup>58</sup> sa vai śrêshṭah prakirt- 46  
titaḥ | <sup>59</sup>vishamê dâdhikam sarpiḥ pivêd=vâ havush-âdika(m)  
|| 46 ||
- 4 snigdh-ôshṇâ vartayaś=ch=êshṭâs=tathâ pân-âśanâni cha [I] mandê 47  
tu lamghanam pûrvvam paśchât=pâchana-dîpanam || 47 ||  
chûrṇ-ârishta-prayôgâś=cha hitâḥ pitta-kaph-âpahâḥ [I] yathâ- 48  
sâtmayam prayôktavyam samê gnau bhishajâm=iti<sup>59</sup> || 48 || Bhava-  
5 ti ch=âtra || <sup>59</sup>Mandê tikshṇê cha mṛiyatê vin=ôpakaraṇair=n=narah 49  
[I] vishamê rôga-bâhulyam samê jîvêch=chiram sukhî || 49 ||  
Tasmâd=rôgêshu sarvvêshu sarva-kâlêshu buddhimân [I]<sup>59</sup> agni- 50  
mûlâ k=kriyâ
- 6 kâr्या paśchâd=âmaya-sâmtayê ||[50 ||] <sup>60</sup>Sva-rasêna śamkhapushpyâ 51  
brâhmî-maṇḍûkaparṇi-madhukânâm [I] mêdh-ârôgya-bal-ârthî

<sup>53</sup> Read *su-vardhibhiḥ*.<sup>54</sup> Metre: Mālinī.<sup>55</sup> Read *munibhir*, as shown by the metre (of 15 instants) and the sense.<sup>56</sup> Metre of verses 43—50: Ślōka.<sup>57</sup> Read *pakti*, as shown by the context in verse 44.<sup>58</sup> The text had originally *prôktô*, which was afterwards corrected, in a lighter ink, to *prôktaḥ*, a visarga being inserted and the vowel *ô* cancelled by two strokes.<sup>59</sup> Here, and in three other places, the original has a mark of interpunctuation, resembling the ancient numeral figure *one*.<sup>60</sup> Metre of verses 51—53a: Âryâ. See note 62.



- jîvitu<sup>61</sup>-kâmaḥ prayuṃjita [|| 51 ||] māsēna tu mēdhâvî shaṇ-māsâch 52  
 =chhruta-dharô bhavaty=a-
- 7 jaraḥ [I] jîvati varsha-sahasraṃ samâ prayôgâch=chata-dvayaṃ vi-  
 dhivat [|| 52 ||] ēvaṃ parataḥ parataḥ prayuṃjamânô bhavaty=a 53  
 jaraḥ || . . . . || ⊙<sup>62</sup> [|| 53 ||]
- 8 <sup>63</sup>Yavâgû-khaḍa-yûshêshu lêha-chûṇ-âgadêshu cha [I] guḍik-âṃjana- 54  
 varttyâsu dhûma-prathamânêshu<sup>64</sup> cha [|| 54 ||] <sup>65</sup>puṭapâka-tar- 55  
 ppaṇa-svêdênâ-vaman-âśchyôtanêshu cha [|| 55 ||]
- 9 anyêshu ch=âpy=anuktêshu yatra bhâgô na kirttitâḥ [I] dravyânâṃ 56  
 sama-bhâgaḥ syâd=dvi-guṇê madhu-sarpishî [|| 56 ||] tri-guṇaṃ 57  
 tu guḍaṃ dadyât=sitâ-chûṇaṃ chatur-guṇaṃ [I] pēshyêshu ya-
- 10 tra n=ôddishṭaṃ dravan=tatra jalaṃ matam [|| 57 ||] dadhi-mûtra- 58  
 payaḥ-sarppi-rôma-śṛṅga-saphêshu cha [I] gavyaṃ prakalpayêt 59  
 =sarvvaṃ madhûnâṃ mâkshik-ôdbhavam [|| 58 ||] Dâḍima-tva-  
 chayâ
- 11 (sâ)rdhaṃ kaṭu-tailaṃ vipâchayêt [I] karṇṇau bhag-ôshṭhau liṅgaś 60  
 =cha sarvva êtēna vardhati [|| 59 ||] Chitrak-ârdha-palaṃ mûlât= 60  
 trivrit-sâtalayôs=tatha [I]
- 12 ∪∪□ṃ dan(t)i-mûlânâṃ karshaṃ karshaṃ prithak=prithak 61  
 [|| 60 ||] pippalyâḥ saindhavâch=ch=aiva tathâ hingv-ambla- 61  
 vêtasât [I] viṃsatis=ch=âbhayâ-mukyâ

## Fourth Leaf : Obverse.

- 1 [∪-∪-] vipâchayêt [|| 61 ||] guḍasy=âshṭa-palât=samyak=kurvita 62  
 daśa-môdakân [I] êkaikaṃ bhakshayêt=tasmâd=daśamê daśamê 63  
 hani [|| 62 ||] dôshânâṃ pâchan-ârbhâya jalam=ushṇaṃ pivêd=anu 63  
 [I] virêkântê tataḥ snâtva sâtmya-
- 2 [m=an]n[am] prayôjayêt [|| 63 ||] n=âtra kaś-chit=parihârô vâk-kâya- 64  
 manasâṃ sadâ [I] sarvv-artukô narêndraṇâṃ virêkô gasti-nirm-

61 Perhaps read *jîvita-kâmaḥ*.

62 This (circle with central dot) is the usual mark to denote the end of a subject. On the corresponding place of the left hand margin there are two figures, the lower of which is the numeral one, and the upper one is apparently 50; if so, the two together would be 51, which would seem to refer to the counting of the verses, though I count 52 or rather 52½ verses up to this point. There are two points, however, to be noted: first, the MS. inserts four dots, which seem to indicate a lacuna; secondly, verse 51 is a regular âryâ of 30 and 27 instants, but verse 52 has two long lines of 30 instants each, and the following half verse consists of a short line of 27 instants. Of verse 53 only one-half exists.

63 Metre of verses 54—66: S'lôka.

64 Read *pradhamânêshu*.

65 This verse is a fragment, two entire pâdas being lost.

- mitaḥ [|| 64 ||] jarā-mṛityu-pramathanāḥ sarvv-āmaya-vināśanāḥ 65  
 [I] vṛishyô rasāyanas=ch=aiva
- 3 mēdh-ārōgy-ābhivardhanāḥ [|| 65 ||] n=āputrāya pradātavyô n=āśi- 66  
 shyāya kathañ-chana [I] rāja-dvishṭe na dātavyô yē ch=ānyē  
 pāpa-chāriṇāḥ [|| 66 ||] <sup>66</sup>Dvê paṃcha-mûlê madhukam guḍûchi 67  
 rāsn=āśvagandh=āmaradāru pāṭhā [I] tvacham ba-
- 4 lē dvê tagaran=tilās=cha mûrvvāṃ kulatthān=naladam ghanañ=cha 68  
 [|| 67 ||] punarnnavām vēṇu-phala-tvacham cha jīvamty=ath=ail=  
 āguru jīvakaś=cha [I] ēraṇḍa-mûlam sa-phala-prarôham kuraṇḍa-  
 pushpāṇi
- 5 mahaushadham cha [|| 68 ||] dvābhyām tribhir=vā kvathitam sa-toyam 69  
 =ājām payô gavyam=ath=āvikam vā [I] sa-saindhavam kim-chid  
 =ataḥ sukh-aushnam=āśchyôtanam vāta-kṛitê kshi-rôgê [|| 69 ||]  
 Dārby=utpalam pa- 70
- 6 dmaka-tuṃga-yāśhā-mēdā-mṛiṇālam madhukam samamgā [I] kālīya- 71  
 kam parppatakā latā cha drāksh=ātha kārshmarya-parūshakam  
 cha [|| 70 ||] mûlāni gundrā-naḍa-vêtasānām śumgāni chā<sup>67</sup> push-  
 pavatām triṇā-
- 7 nām [I] prapaunḍarikam sa-kirātatikṭam bhadraśriyam nimba-paṭôla- 72  
 vāsām [|| 71 ||] dvau triṇi v=ājê payasi striyā vā śritāny=ath=  
 āśchyôtanam=uttamam syāt [I] sa-śarkkaram mākshika-sampra-  
 yuktam paittê kshi-
- 8 rôgê rudhir-ātmakê cha [|| 72 ||] Triṇy=ūshaṇāni triphalā haridr[ā] 73  
 kāsisa-jâtî-grihadhûma-jātyaḥ [I] lāksh=ātha damtî surasô vachā  
 cha pāth=āśvagandh=āmaradāru ch=āgyam [|| 73 ||] sa-kaṭphal- 74  
 ail-āguru-kaṇṭa-
- 9 kârî rôdhram karañjam vṛihatim śvadampshṭrām [I] dvê triṇi v=ā- 75  
 taḥ salilê śritāni kōshpāni kâryāni sa-saindhavāni [|| 74 ||] āśchy-  
 ôtanam ślēshma-kṛitê kshi-rôgê madhu-pragāḍham pravadamti  
 samtaḥ [|| Parūsha[k]-ām[r]ā-
- 10 taka-tintidika-vṛikshāmbala-jamvv-āmra-kapitttha-kôlaiḥ [|| 75 ||] sa- 76  
 mātulumgair=atha dāḍim-āmblair=madyaiḥ payôbhir=d=dadhi-  
 mastunā vā [I] dārvy-utpal-ādyaiḥ kvathitais=cha s-āmblair=  
 āśchyôtanam saindhava-sam[prayuktam] [|| 76 ||]
- 11 (-)nyāsa-śīt-ōshṇa-kṛitam nihamti rakt-ātmikām nētra-rujam pra- 77  
 sahya [|| Samsargga-jê sarvva-samutthitê vā hin-ādhikatvam  
 prasamikshya rôgê [|| 77 ||] kurvvī(ta) □ m - □ r □ ∪ - ∪ - - 78

<sup>66</sup> From here down to verse 85a, the metre is, in various combinations, a mixture of Indravajra and Upēndravajra.

<sup>67</sup> Read *vā*.

## Fourth Leaf: Reverse.

- 1 <sup>63</sup>—pahar(i) vivijñah [॥] Ēraṇḍa-mûlam sa-phala-prarôham vijar-  
jaram kshîra-yutam tv=ajânâm [॥ 78 ॥] syâd=vâta-rakt-âpaham 79  
=êtat=agryam=âśchyôtana[m sad]bh[i]shaj(ô) vada[m]t[i] ॥ Pra-  
paunḍar[î]ka[m] madhuka[m] haridrâ[ñ] chha— ∪ — ∪ — ∪ — ∪  
— — [॥ 79 ॥]
- 2 âśchyôtanam śarkkarayâ vimisram pitt-ânîl-ârttim vinivarttayêta ॥ 80  
Natam śvadamshtrâ-vrihatî-tvachañ=cha hrîvêram=ity=êsha śri-  
tas=tv=ajânâm [॥ 80 ॥] kshîr-ôḍakaiḥ saindhava-samprayuktam= 81  
âśchyôtanam vâta-kaph-âpaham syâ(t) [॥] (— ∪)
- 3 Dârvyâ madhukam cha mukhyam gavyê payasy=ât=kvathitah striyâ  
vâ [॥ 81 ॥] âśchyôtanô mâruta-rakta-pittê sa-śarkkaraḥ sad-bhi- 82  
shajâ vidhêyah ॥ Chûrṇṇâni sūkshmâni phala-trayasya badhvâ sitê  
kshauma-paṭ-aika-dêśê [॥ 82 ॥] âjê [payas]y[=am]— 83
- 4 ganayâ<sup>69</sup> jalê vâ pariplutam sarvva-ruj-âpaham syât ॥ Dârvvîm hari-  
drâm triphalâm sa-mustam<sup>70</sup> sa-śarkkaram mâkshika-samprayuk- 84  
tam [॥ 83 ॥] âśchyôtanam mânusha-dugdha-yuktam pitt-âsra-vât-  
âpaham=agryam=uktam ॥ Ēraṇḍa-mûlais=ta—
- 5 ruṇaiḥ sa-pattaiḥ kalkair=athô shasṭhika-taṇḍulânâm [॥ 84 ॥] ghrit- 85  
âplutam śâva-kara-praliptam pûrvvêna kalpêna ruj-âpaham syât ॥  
[85 ॥] <sup>71</sup>Svêda-putâpâka-nâbana-tarppaṇa-ghritapâna-lêpa-pari- 86  
shêkân [1] âśchyôtana—
- 6 nirddishtair=dravyair=êtaiḥ prakalpayîta bhishak [॥86 ॥] <sup>72</sup>Ritu- 87  
vyâdhi-hit-âbhîlu-vyamga-nîlika-nâśanân [1] visha-shôth-âpahâm  
=ś=ch=aiva mukha-lêpân=prachakshatê [॥87 ॥] <sup>73</sup>Tvak-kshirîṇâm<sup>74</sup> 88  
chandana-padmakau cha gundrâm mri—
- 7 nâlam ghana-vâlakau cha [1] mûlam kuśânâm tagar-ailavâlu tâlisa-  
patram naladam tilâś=cha [॥ 88 ॥] masûra-dûrvv-âma-yavam mri- 89  
nâlam rasaś=cha yashṭimadhuk-ôtpalânâm [1] sâilêya-must-âguru
- 8 jhâmakañ=cha sthaunaiyak<sup>75</sup>-ailâ tagaram tilâś=cha [॥ 89 ॥] tvak- 90  
patra-kushṭh-âguru jhâmakañ=cha mâṃsîm harêṇum paripêla-

<sup>63</sup> Here four syllables appear to be omitted, for which I can discover no place either at the bottom of the obverse, or at the top of the reverse of the fourth leaf.

<sup>69</sup> The mutilated phrase must, I think, be *payasy=anganayâ* 'in the milk of a woman'; though the correct form would be *anganâyâ*; the short *a* is probably due to the exigencies of the metre.

<sup>70</sup> The text originally had *sa-mustâm*, which by a later hand is corrected to *sa-mustam*.

<sup>71</sup> Metre: Âryâ.

<sup>72</sup> Metre: S'lôka.

<sup>73</sup> Metre of verses 88—103: either Indravajra, or some combination of Indravajra and Upêndravajra.

<sup>74</sup> Read *kshîrîṇîm*.

<sup>75</sup> Read *sthaunêyaka*.

- vañ=cha [1] yashtihva-rôdhr-âguru chandanañ=cha punarnnavâ  
krishṇa-tilâ latâ cha [11 90 11] ity=ardha- 91
- 9 rūpair=v=vadana-pralêpaiḥ<sup>76</sup> kâlêshu gharm-âdishu samprayôjyaḥ<sup>76</sup> |  
nidarsitâ drishti-hitâ narāṇaṃ dôsh-âpahân=mê śrīṇu<sup>77</sup> ch=ôchya-  
mânân [11 91 11] Vât-âmaya-ghnâ jalad-âgam-ôktâḥ pitt-â- 92
- 10 maya-(ghnâ)ḥ śaradi pradishṭâḥ [1] grishm-ôpadishṭâ rudhir-âmaya-  
ghnâḥ kaph-âmaya-ghnâḥ kusum-âgam-ôktâḥ [11 92 11] Karppâsa- 93  
mûlân̄y=alatâm=usîra-kâlîyakâ kshîravatâm tvachaś=cha [1] bha-  
draśri-
- 11 [ya] [- ୨୨]kaṃ yavâś=cha vadamti varṇyân=vadana-pralêpân  
[11 93 11] êtâni mûtrêṇa gavâṃ prasôshya kôl-âmba-mûtraiḥ saha 94  
misritâ vâ [1] syur=m=mâtulumpasya rasê yutâ vâ sa-sarshapâḥ  
sôshya

## Fifth Leaf : Obverse :

- 1 [୨-୨--] <sup>78</sup> 11 94 11 -- ୨-- ୨୨-୨୨] (kâsu) kl[i]sht(ê) cha 95  
dusht[ê] rudhirê cha mukt[ê] [1] (s)n[êhê] v[i]rêkê vividhê cha  
nâsyê kritâ<sup>79</sup> vidhêyâ vadana-pralêpâḥ [11 95 11] Tvak-patra-mâ- 96  
ṃsî-nata-chandanam cha manaḥsîlâ vyâghra-
- 2 [nakham] ୨-- (m)<sup>80</sup> [1] • (âmb)l(i)ka-kushṭh[am] surasê haridrê  
vish-âpahâḥ syur=vadana-pralêpâḥ 11 96 11 Mûrvv-âśvagandhâ 97  
triphalâ karañjam sôth-âpahâḥ<sup>81</sup> syur=vadana-pralêpâḥ 11 Mûvv<sup>82</sup>=  
âpi gô-mûtra-yutâm vadamti sôth-âpaham
- 3 [s]y[âd]=va(d)ana-pralêpam 11 97 11 Mukhê praliptêna hasên=na rud- 98  
yât=svapnam na sêvêta tathâ na ch=âdyât [1] n=âgnau pratapyên=  
na cha dhârayêta śushkam pralêpam vadanê manushyaḥ [11 98 11] 99  
Abhîlu-nîlikam=ath=âpi
- 4 kushṭham vyamgam sa-pilpam<sup>83</sup> tilakâm=ś=cha jantôḥ [1] śâmyamti sa-  
dyô vadana-pralêpâd=drishtiś=cha baktrañ<sup>84</sup>=cha bhavêt=prasan-  
nam 11 99 11 Mukhê praliptê hasatô śnatô vâ ślêshmâ sa-chhâyuh<sup>85</sup> 100

<sup>76</sup> Read *pralêpâḥ* and *samprayôjyaḥ*.

<sup>77</sup> The text originally had only *ṇu*; the syllable *śrī* was afterwards inserted interlinearly in a lighter shade of ink.

<sup>78</sup> Perhaps fill up with *mukhê vidhêyâḥ*.

<sup>79</sup> Read *kritê*.

<sup>80</sup> The lacuna may be filled up with *harêṇum*; compare verses 105 and 106, where also we have *vyâghranakhâm* and *harêṇum*.

<sup>81</sup> Read *sôth-âpahâḥ*.

<sup>82</sup> The letters look rather like *myavvâpi*. The fact is, the original writing was *muṇvâpi*, which was, rather clumsily, corrected to *mûrvâpi*. But read *mûrvâpi* (*mûrvâpi*).

<sup>83</sup> Or perhaps *sa-pilpâ*.

<sup>84</sup> Read *vaktrañ=cha*.

<sup>85</sup> Read *sa-vâyuh*.



- 5 svapataḥ prakōpah [I] yāty-āsū tasmāch=chhirasô virêkâḥ snêhās=cha  
dhûmās=cha punaḥ prayōjyâḥ [|| 100 ||] Agni-pratâpād=vidrutaś 101  
=cha jamtôr=dhritê cha śushkê vadana-pralêpê [I] abhilu-
- 6 pûrvvân=pravadamti rōgām=s=têshâm yath-ôktâm vidadhita śântim  
[|| 101 ||] Nakt-ândha-taimirya-sîrô-rtti-dâham pitt-âtmiakâm 102  
chakshu-rujâm sa-dâhâm [I] dôshās=tathâ=nyê pi mukha-tvacha-  
sthâḥ śâmyanti sadyô
- 7 vadana-pralêpât [|| 102 ||] Akshnôr=v=vikârê kapha-mârutâbhyâm 103  
nastah-kritê pinasa-rôgiṇâm cha [I] hanu-grahê śirsha-rujâsu ch  
=aiva vadamti varjyân=vadana-pralêpân [|| 103 ||]<sup>86</sup>Aṅgulasya 104  
chatur-bhângô
- 8 mukha-lêpô vidhiyatê [I] madhyamas=tu tribhângah syâd=anty<sup>87</sup>  
— — — ∪ — bhavêt [|| 104 ||] <sup>88</sup>Yashtihva-rôdhrâm triphalâ mriṇâ- 105  
lam sit-ôpalâm kânc̣hana-gairikañ=cha [I] patra-tvag=êl-âguru  
dêvadâru punarnnavâ vyâghranakhâm-
- 9 janañ=cha [|| 105 ||] manaḥsil-âlâm vṛihatî-tvachañ=cha mâmsi- 106  
harê[n]u[m pari]pêlavam cha [I] sauvirakam gairika-katphalañ=  
cha syâch=chbhârivâ śarkkarayâ vimisrâ [|| 106 ||] ity=ardha-rûpais 107  
=chaturah pradištâḥ kaph-âsra-pi(tt-ânila)-
- 10 rôga-śantau [I] viđâlakais=tair=n=ayanam samantâd=â pakshma-  
mûlât=pradihêd=bahir=v=vâ [|| 107 ||] Rôdhrañ=cha kim-chit=tu 108  
ghritêna digdham=ayô vighrishṭâm=abhayâm=athô vâ [I] tvacham  
vṛihatyâḥ samam=añjana[ñ=cha viđâ]-
- 11 lakah sarva-ruj-âpahah syât [|| 108 ||] <sup>89</sup>Gairika-rasâmjana-âmjana- 109  
manaḥsilâ-ritikusuma-sama-bhângâḥ [I] îshan-maricha-sahîyâ dvi-  
guṇam □ ê[(∪ ∪ ∪ ∪ ∪ ∪ ∪) - || 109 ||]

Fifth Leave: Reverse.

- 1 Maricha-kusumê cha haritam vipachên=mpidv-agninâ ghrita-sahlyam 110  
[I] añjana-viðalakô yañ=cha ku[r]vv (vakshyâma) - - -  
[II 110 II]<sup>[90]</sup>- - - ♪ - - ♪ | - - - ♪ - ♪ - II - - - ♪ - - 111  
♪ I)  
2 prôchyamânām nibôdhata [II 111 II] Rasa-dôshât=vayavyâçh=cha 112  
pitta-sônita-dûshanât [I] bhavaty=akâla-palitam vridhdhasya jarasâ  
bhavêt [II 112 II] Prâyëṇa ślëshmalâ nârÿâś=chhâyâ sa [- ♪ - 113  
♪ - | - - - - ]

86 Metre : S'lôka.

87 The verse might be thus completed: *antyas=tv=ardh-āṅgulô=bhavêt.*

<sup>83</sup> Metre of verses 105—108: combinations of Indravajra and Upêndravajra.

89 Metre of verses 109 and 110: Âryâ.

<sup>90</sup> Metre of verses 111—131a: Ślōka.

- p. 216.

## Translation.

(Verse 1.)—Om! The summit of boundless wealth, inhabited by companies of Dêvarshis and Siddhas, by Kinnaras, Nâgas, Yakshas and Vidyâdharas, the holy pleasure-ground of the immortal<sup>1</sup> gods that inhabit heaven, [*all*].....overtopping;

(Verse 2.) Where, scattered in every direction by reason of the multitude of the rays of thousands of protuberant gems, and dissolved by fear, darkness, being apprehensive of the abode of the Moon, Indra, the Sun and Fire, does not *venture* to approach even in the nights of the rainy season<sup>2</sup>;

(Verse 3.) Which is incessantly worshipped by numerous companies of sages accompanied by their disciples, carrying wood, kuśa-grass, fruits, water and flowers; in whose groves the trees have their branches examined<sup>3</sup> by the celestial maidens in quest of flowers;

(Verse 4.) Where, under the magic of the rays of their lord, the moon, who has his permanent abiding-place on the crest of matted hair of the Three-eyed-one (*i. e.*, Śiva), the *two* gems, talc<sup>4</sup> and the moon-stone, even by day, let flow a mighty stream,<sup>5</sup> just as if they were<sup>6</sup> glacier-ice;

(Verse 5.) In whose beautiful groves, crowded with flower and fruit bearing trees, resounding with the voices of swarms of various kinds of birds, and having their rocky ground washed by the water emitted from the talc<sup>7</sup>, the medicinal plants glow at night like sacrificial fires;

<sup>1</sup> The reading *ambrita* (for *amṛita*) is doubtful. But I can make nothing better of the mutilated letters.

<sup>2</sup> The suggestion of the reading *prâvṛṣṭi-niśṭsv = api* I owe to the Pandit of the Asiatic Society.

<sup>3</sup> Or: touched.

<sup>4</sup> The MS. reads *abda*, lit. 'cloud.' As this is a synonym of *abhra*, which means both 'cloud' and 'talc,' I take *abda* also to mean 'talc.' It is not given, with this meaning, in any Sanskrit dictionary accessible to me; but the context clearly requires two minerals which should be both transparent and of a whitish or bluish white colour. Both talc and moonstone possess these qualities. The difficulty, however, is that mica or talc is not exactly a *maṇi* or gem. Another difficulty is, that both *abda* and *indukānta* are said to have the moon for their lord. This is true of the moon-stone, but I am not aware of its being ever ascribed to talc. Yet I do not know what else *abda* could be but talc.

<sup>5</sup> The MS. reading *śōtan* gives no sense. I conjecture *śrōtan*, *i. e.* *śrōtam* 'current', accusative of *śrōta*, or *śītan* (*i. e.*, *śītam*) 'water.'

<sup>6</sup> The original has *upalābham* which, in this sense of 'resembling,' has not yet been noted in any Sanskrit dictionary. Literally it means 'catching up', 'reaching up to'.

<sup>7</sup> The original has *abda-mukta*, which admits of a double meaning: 'emitted from talc' or 'pearl-like talc'.

(Verse 6.) Where the lions, with thick manes brighter than the rays of the moon, *and* shoulders besmeared with the matter oozing from the sides of the heads of elephants in rut, do not brook even the thunder of masses of clouds, but roar with mouths like mountainous caverns ;

(Verse 7.) On that mountain, which is, as it were, the cream of the whole earth *and*, through its gifts of the riches of the world, the benefactor of all *creatures*,—on its summit, delightful with its trees bearing flowers and fruits at all seasons, there dwell the following Munis of enlightened mind :

(Verse 8.) Âtrêya, Hârîta, Parâśara, Bhêla, Garga, S'âmbavya Suśruta, Vasishṭha, Karâla and Kâpya. Hundreds of times they used to roam about, in company of one another, enquiring into the tastes, properties,<sup>3</sup> forms, powers and names of all medicinal plants.

(Verse 9.) Having observed a *plant* with leaves dark-blue like sapphire, *and* with bulbs white like jasmin, crystal, the white lotus, moon-rays, conch-shell or mica, *and* having his attention aroused *thereby*, Suśruta approached the Muni Kâśîrâja *with the enquiry*, what it could be. Then that holy man replied to him as follows :

(Verse 10 and 11.) “Of yore the lord of the Asuras himself drank the forth-churned nectar ; his head the holy Janârdana (Vishṇu) cut off. (11.) The pharynx remained attached to the severed head ; *from it* drop fell on the ground, *and* those were its (*garlic's*) first origin.

<sup>3</sup> I propose to read *guṇa* (as in verse 13). The MS. reading *gaṇa* yields no satisfactory sense. *Guṇa* refers to the five elements : earth, water, fire, air and ether, which are the constituents of all material objects, and after which, according as one or the other predominates in an object, the latter is named. See *Suśruta* I, 41. *Vîrya* or ‘power’ is that quality by which a drug produces its effect. According to some, *vîrya* is of two kinds : heating and cooling ; others enumerate eight kinds : *ushma* or heating, *śîta* or cooling, *snigdha* or emmollient, *ruksha* or drying, *visâda* or clearing, *pichchhila* or lubricating, *mṛidu* or mild, and *tikshṇa* or sharp. *Rasas* or ‘tastes’ are said to be five : *madhura* or sweet, *ambla* or acid, *kaṭu* or acrid, *tikta* or bitter, *kashâya* or astringent, *lavâṇa* or saline. See *Suśruta* I, 40, 41, 42. The following table shows the reducing effects of the *vîryas* and *rasas* on the three humours according to the *Suśruta* :—

| Humour | reduced by vîrya                          | or rasa.                        |
|--------|-------------------------------------------|---------------------------------|
| Wind   | <i>ushma, snigdha</i> {                   | <i>madhura, amla, lavâṇa.</i>   |
| Bile   | { <i>śîta, pichchhila, mṛidu</i> {        | <i>madhura, tikta, kashâya.</i> |
| Phlegm | { <i>ushma, ruksha, viśâda, tikshṇa</i> { | <i>kaṭu, tikta, kashâya.</i>    |

It will be observed that the effects mentioned in verse 15 agree with this table.



## SECOND LEAF: Obverse.

(Verse 12.) Hence Brāhmans do not eat it, because of its having originated from something connected with a living body; its evil smell also the learned in sacred lore declare to be due to the same cause.

(Verse 13.) Because of the absence of salty taste they call it 'Rasūna<sup>9</sup>;' and its designation of 'Laśuna' is well-known among the people. What need to mention the many names by which it is called in the languages of *different* countries? Hear only its tastes, properties, and powers on account of *their importance* for its medicinal use.

(Verse 14.) Its taste, when eaten as well as when digested, is declared to be pungent; but when digested *its taste* is said by others<sup>10</sup> to be sweet; it is of light digestion,<sup>11</sup> *as shown* by its smell, and hot, *as shown* by its blood-invigorating power, and it is famed as an aphrodisiac.

(Verse 15.) By the foremost Munis it has been declared to be, on account of its sour, hot and oily nature, a means of reducing the strength of the windy humour, and,<sup>12</sup> on account of its sweet and bitter nature, also to be, through its juiciness, a means of abating the bilious humour. On account of its hot, sharp, and pungent nature it is said by the learned to be a subduer of the strength of the phlegmatic humour. It was appointed by the Creator a means of removing the *defects of these three humours*<sup>13</sup>, in order that it should kill all diseases.

<sup>9</sup> *Rasūna*, according to popular etymology, derived from *rasa* 'taste' and *ūna* 'without', which would properly produce *rasōna*. Or the intended etymology may be from *ra* (for *la*, abbreviation of *lavāna*) 'salt' and *śūna* (= *śūnya*) 'destitute of.'

<sup>10</sup> I propose to read *anyaiḥ*. The MS. reading *anyaḥ* yields no satisfactory sense.

<sup>11</sup> Digestion is said to be of two kinds: *guru* or heavy (or brisk) and *laghu* or light (or sluggish). Drugs in which earth and water predominate (see note 8) cause heavy, while drugs in which fire, air and ether predominate, cause light digestion. In the latter urine and faeces are obstructed (*baddha-viṇmūtra*), while in heavy digestion they are abundant or loose (*spīṣṭa-viṇmūtra*). Purgative drugs, accordingly, are said to contain an abundance of earth and water, while emetics have more of air and fire. In light digestion the tendency is said to be upwards, in heavy, downwards. See *Suśruta* I, 40, 41.

<sup>12</sup> The following line does not scan in the original, unless *sa* is omitted. I am doubtful as to what is intended to be said. *Sa-rasatayā* might also be read as one word, but would mean the same: 'through its having juice'. Another difficulty is *pitta-bhāva*. There is no taste called *pitta*, so far as I am aware. I have translated 'bitter,' taking *pitta* to be a clerical error for *tikta*.

<sup>13</sup> *Dōsha*, lit. 'defect', is a name for the three humours: *vāta* or *vāyu* or *pavana* 'wind', *pitta* 'bile' and *kapha* or *ślēshman* 'phlegm'. They are called so, because they are (as the *Charaka*, p. 254, explains) the 'weak points' of the bodily system, inherent in it by nature (*prakṛiti-bhṛta*), but as natural constituent elements of the body, they belong to the supports of the body (*śārīr-ōpakaraka*), and only become troublesome when they are in a state of derangement (*vikṛita*).

(Verse 16.) It kills also the windy humour when it has got into the bones, and rectifies also the phlegmatic humour when it (*i. e., its defect*) is not of any long standing; it also greatly stimulates the digestive power, and may be considered an excellent means for restoring vital power<sup>14</sup> and colour.

(Verse 17.) Now by those who want to enjoy in comfort many sorts of liquor, flesh, clarified butter, barley and wheat, the following festival of the garlic is to be observed in the winter season as well as in the months of Madhu and Mādhava.<sup>15</sup>

(Verse 18.) When trimmed girdles, fit for the conquest of men, are given up by the women, and necklaces are not worn by (*lit., do not approach*) them on account of the cold that distresses their bosoms, and when the husbands do not enjoy themselves on the roofs of the houses of their wives in the full light of the rays of the moon, at that time it should be observed, also when Aguru (fragrant aloe) is highly priced and things coloured with Kumkuma (saffron).

(Verse 19.) Then on the house-tops, gate-ways and upper windows garlands of garlic richly set with its bulbs should be displayed, and on the ground itself one should have worship performed. One should also cause the people of one's household to wear chaplets made of the same (*garlic*). This is the procedure (*for observing the festival*) appointed for the people; it is short, as needed for the lower classes.<sup>16</sup>

(Verse 20—27.) Now the first formula: with a cleaned body and removed from light, after having worshipped the gods, brāhmanas and fire, the patient should drink, on a day marked by an auspicious planet or constellation, of the fresh juice of garlic, strained through a piece of cloth: (21.) either one kuḍava<sup>17</sup> or half a kuḍava or one and a half kuḍava or even more;

<sup>14</sup> On *bala* or 'vital power' see *Suśruta* I, 15. It is the resultant of the seven *dhātus* or 'constituent elements of the body', and is also called *tējas* or *ōjas*. See verses 43—45.

<sup>15</sup> That is in spring, of which Madhu or Chaitra (*i. e., March—April*) and Mādhava or Vaiśākha (*April—May*) are the two first months.

<sup>16</sup> I am not satisfied as to the correctness of the translation of the last sentence, the original text of which is very obscure.

<sup>17</sup> On this and other measures see *Colebrooke's Essays*, vol. II, p. 533ff. A *kuḍava* is said to be a cubic measure of either  $3\frac{1}{2}$  or 4 fingers (*angula*), holding 2 double handfuls (*prasriti*, a quantity held in both hands by a man of common size). 4 *kuḍavas* make one *prastha*, 4 *prasthas* make one *āḍhaka*, and 4 *āḍhakas* make one *drōṇa* or *kalaśa*; accordingly 64 *kuḍavas* = 16 *prasthas* = 1 *kalaśa*. A *kuḍava* holds 4 *palas*, a *pala* being a 'handful' (*mushṭi*) or half a *prasriti*, or 2 *palas* = 1 *prasriti*. As measures of weight 2 *tôla* make 1 *karsha*, 4 *karsha* = 1 *pala*, 8 *pala* = 1 *sér*, 2 *sér* = 1 *prastha*, 4 *prastha* = 1 *āḍhaka*, 4 *āḍhaka* = 1 *drōṇa*. See Dr. Dutt's *Hindu Mat. Med.*, p. 8.

(Second Leaf: Reverse).

there is here no fixed measure; let him drink in proportion to the strength of his humours and to his disease.<sup>18</sup> (22.) While it is clarifying, he should slowly blow on it soft currents of air with fans made of palm leaves; and when it boils up or is being spoiled,<sup>19</sup> he should sprinkle it with cold water mixed with powder of sandal. (23.) Of this decoction, fortified by one third part of spirit of rice, he should sip a mouthful,<sup>20</sup> and first stopping a moment to let it play in the throat, he should drink it together with the rest. (24.) When this is digested, he may eat milk with rice; or milk may be taken with the addition of the broth of game or with dainty decoctions of pulses or with oleaginous substances<sup>21</sup>; but he should take these moderately and only once a day. (25.) He may drink mândvika, or madhu, or madirâ and madhu in equal parts, or arishta, or śidhu, or jagala, or agaja, or mairêya,<sup>22</sup> or whatever other strong liquor there may be; but he should drink these with water, or one at a time, lest there be intoxication. (26.) If he is not used to drinking liquors, he may drink warm water or sour kâncchika; or he may drink tushôdaka or suvîraja,<sup>23</sup> or fresh whey. (27.) He should never take it with treacle, nor should he ever drink unboiled water, while using this prescription; otherwise he will always be in danger of indigestion, nor will he be able to eat properly for a few years.

(Verses 28 and 29.) Now the second formula: Having crushed small fresh bulbs of garlic, and, together with an equal quantity of clarified butter, stirred them well with a churning-stick in a vessel used for clarified butter, one may, after having let the mixture stand for ten days or longer, eat it together with an equal quantity of bel-fruit (*Aegle*

<sup>18</sup> It might also be translated: 'in proportion to the state of his humours, his vital power and his disease.'

<sup>19</sup> Original *murchchhâ=pi vatô pi yadi*; I do not know the exact meaning of *vata*.

<sup>20</sup> Original *ganḍûsha*, a term used with gargles; see Dr. Dutt's *Mat. Med.*, p. 18.

<sup>21</sup> *Snêha*, 'oleaginous substance' is said to include the following: *taila* or oil, *ghrita* or clarified butter, *vasô* or fat, and *majjd* or marrow.

<sup>22</sup> Regarding the identity of these liquors see Dr. Dutt's *Hindu Mat. Med.*, pp. 13, 266, 272, 273, also *Sûsruta I*, 45 (transl., pp. 239—243). The only variety that I cannot identify is *agaja*. In the dictionaries it is said to be 'bitumen.'

<sup>23</sup> The *suvîraja* of the text is probably the same as what is called *sauvîraka* in *Sûsruta I*, 45. All three drinks are kinds of sour gruel, produced by the acetuous fermentation of a decoction of different sorts of unhusked grain: *tushôdaka* or *tushâmbu* is made with the husks of a kind of pulse, *suvîraja* or *sauvîraka*, with unhusked barley, and *kâncchika* or *kâncjika* or *dhânyâmla* with unhusked rice. On their preparation see *Sûsruta I*, 44 (transl., pp. 209, 210, 246); also Dutt's *Mat. Med.*, p. 12.



*marmelos*); and when it is digested, one should observe the diet prescribed in the case of the use of the decoction.<sup>24</sup>

(Verse 30.) The two formulas, above set forth by me, are the principal. If thou art not willing to make use of either, hear other formulas from my mouth.

(Verse 31.) *The third formula.* After cleaning bulbs of garlic till they are as bright as a conch shell, they may be eaten with flour of parched grain, kulmâsa and chukra,<sup>25</sup> well cooked with clarified butter and oil, after the manner of broths and meats, accompanied with mashed beans and green vegetables, well seasoned with some aromatic substance<sup>26</sup> and sonchal salt. Or they may be eaten prepared in many other ways. Such others<sup>27</sup> are as follows:

(Verse 32.) *The fourth formula.* Having boiled one and a half bunches of stalks of garlic with meat, one may give this savoury broth to drink, after it has clarified; one may add to it an equal quantity of boiled milk, either pure or mixed with a decoction of pulse.

(Verse 33.) Now *the fifth formula*: garlic together with oil and śukta<sup>25</sup>, placed in a quantity of barley, should be plastered round with clay and allowed to stand for a year; a person partaking of this will get rid of diseases even (if of long standing).<sup>28</sup>

(Verse 34.) *The sixth.* If by an apathetic man tugâ (manna of bamboos) is allowed to stand for three nights, then half of it should be caused by that man to be prepared with garlic .....

### Third Leaf: Obverse.

..... curdled milk and clarified butter or also butter-milk; using this a brâhman may overcome various diseases and become of a sound body.<sup>29</sup>

<sup>24</sup> The *rasa* or decoction is that prescribed in verses 20—27.

<sup>25</sup> *Kulmâsa* and *chukra* or *śukta* are two kinds of sour gruel. As to the latter see Dr. Dutt's *Mat. Med.*, p. 12. See also note 23, above.

<sup>26</sup> *Gandha* is the name of several aromatic substances: valerian, sandal, myrrh, aloe-wood, camphor, saffron, etc.; hence the term *gandhâshṭaka* or 'the eight fragrant substances.' I do not know which of these may here be intended, or whether any particular aromatic is intended.—On *sonchal* see Dutt's *Mat. Med.*, p. 85.

<sup>27</sup> I thus translate the *itarâṇi* of the text, supplying *sâdhanâni*. But I am not sure about the meaning of the phrase. The same phrase occurs in the prose portion after verse 35, below, where *kalpâḥ* may be supplied with *itarê*. Possibly *itarâṇi* is an instance of false concord with *sâdhitân* (see introductory remarks), and *śrinushva me* should be understood: "hear from me the following other preparations made in many other ways." The sense remains the same.

<sup>28</sup> This portion is lost in the original. See footnote there

<sup>29</sup> I can make nothing satisfactory of *śmarshmî*. I take it to be connected with



(Verse 35 and Prose.) *The seventh.* Thirty-two prasthas<sup>17</sup> of the juice of garlic, one quarter as much of yeast, one prastha of oil free from all impurity, and six *prasthas* of flour should be taken. A wise physician will further add one *kalaśa* of *Mêshaśringî* (*Asclepias geminata*) boiled in water, and once more throw in two prasthas of flour. (Prose) This liquor will always, after five days, become ready endowed with taste, colour and aroma; as an oil also it is excellent and most effective. If a person uses it with a purpose, whether as an oil or as a liquor, hosts of powerful diseases will relinquish him. Other formulas are the following:

(Verse 36.) *The eighth.* Having crushed one prastha of cleaned garlic, one should mix it with half a *pala*<sup>17</sup> of powder of the three myrobalans<sup>30</sup>, and a *kuḍava* of clarified butter and oil, and then allow it to stand for ten days. This makes an agreeable remedial paste against cough and asthma.

(Verses 37 and 38.) Joined with remedies against wind, *garlic* cures abdominal tumours caused by the windy humour; and if joined with *Khadira* (*Acacia catechu*), it at once cures skin diseases. Mixed with *Hayagandhâ* (*Physalis flexuosa*), it is a remedy against cough and asthma; and mixed with liquorice, it is declared to be good for the voice. (38) It cures various kinds of diseases, when joined with various kinds of substances. There is no limitation in the way of administering it; for thus was its administration in vogue among the sages.

(Verses 39—41.) Hear from me with an attentive mind, O *Suśruta*, as I set forth briefly its virtues, when applied as an alterative tonic. (40) It cures skin diseases, loss of appetite, abdominal tumours, cough, leanness, and weak digestion. It removes rheumatism, mœnorragia, abdominal pains, consumption, morbid affections of the bowels, enlargement of the spleen, and hæmorrhoids. It banishes hemiplegia, sciatica, worms, iliac passion, and urinary disorders. It cures lassitude, cold of the nose, rheumatism of the arms or back, and epilepsy. (41) Venerable Sir, with a voice beautiful like that of a tabour or flute, with a *complexion* clear as molten fine gold, strong in memory and mind, with a well-knit body, free from all wrinkles etc., with all your senses steady, collected and constantly increasing in vigour, you shall live for a hundred years, with a well-regulated digestion and inexhaustible virility.

(Verse 42.) Thus far the administration of garlic has been explained by me, even as it was taught by the sages of old, ..... and one should accurately observe it .....

*śman* 'body.' I may have failed to read it correctly, though the letters seem distinct enough.

<sup>30</sup> *I. e.*, the chebulic, the emblic and the belleric myrobalans. See Dr. Dutt's *Materia Medica*, p. 161.

(Verses 43—45.) Food, digestion, the normal condition of the elements, health, plumpness, spirits, energy and *long* life are *all* dependant on the digestive faculty. (44.) The digestive faculty is set in activity through food; and the resultants of digestion are the elements; health depends on the normal condition of the elements; plumpness on health; (45.) good spirits and energy on plumpness; and through all these the life of living beings is prolonged. Hence one should first of all examine *the state of the digestive faculty*.<sup>31</sup>

(Verse 46—48.) When *the digestive faculty* conduces to the normal condition of the elements, it is said to be (normal or) regular, and this is justly considered its best state. When the digestion is (abnormal or) irregular, one should drink things made of curdled milk or clarified butter or habush and the like; (47.) oily and warm applications<sup>32</sup> also are useful; afterwards food and drink *may be taken*. When the digestion is weak, one should fast at first, and afterwards use medicines to promote appetite and assist digestion<sup>33</sup>; (48.) the use of powders and medicated liquors (*arishta*) also is advantageous as removing defects of the bilious and phlegmatic humours. When the digestion is regular, the physicians should prescribe whatever is agreeable to the system.<sup>34</sup>

Further it may be observed :—

(Verses 49 and 50.) When the digestion is weak or too active, a person dies, unless he receives proper treatment; when it is irregular, all sorts of diseases arise; when it is regular, he lives long in comfort.<sup>35</sup> (50.) Hence a wise physician will at all times in all diseases *first* direct

<sup>31</sup> Compare with this the opening statements in I, 35 and 46 of the *Suśruta*, which appear to inculcate a different view.—According to the *Suśruta* the *dhātus* or ‘elements’ of the body are seven (see I, 15): *rasa* chyle, *rakta* blood, *māmsa* flesh, *medas* fat, *asthi* bones, *majjā* marrow, and *śukra* semen.—*Sāmya* or ‘equilibrium’ is the exact quantity required of each element to constitute a healthy body.

<sup>32</sup> I do not know the exact meaning of the term *vartayaḥ* here. Neither “pill” nor “bougie” seems quite applicable. Perhaps *snigdghōshnā* should be separated from *vartayaḥ*, and the phrase translated: “oily and warm remedies and *vartis* (whatever the latter may be) are useful.”

<sup>33</sup> On *pāchana* and *dīpana* see Dr. Dutt’s *Hindu Mat. Med.*, p. 5.

<sup>34</sup> On *sātmya* see *Suśruta* I, 35 (verse 35).

<sup>35</sup> With verses 46—50 should be compared the statements in *Suśruta* I, 35. There four kinds of digestion are enumerated: regular, irregular, weak and too active. These four kinds are referred to in our verse 49. But verses 46—48 mention also a different classification into two kinds only: regular and irregular; and for the latter kind curdled milk and clarified butter are prescribed. But in the *Suśruta* these are prescribed for a too active digestion. Moreover the *Suśruta* prescribes oily (*snigdha*, Dr. Dutt’s transl. ‘cooling’?), acid and saline remedies for irregular digestion, while our verse 48 prescribes oily and warm remedies.

his treatment to the proper regulation of the digestive faculty, afterwards *paying attention* to the relief of the sickness.

(Verse 51—53.) He who desires a good memory, health and strength, and wishes for a long life, should make use of the fresh juice<sup>36</sup> of the Sankhapushpî (*Canscora decussata*), Brâhmî (*Herpestis Monniera*), Maṇḍūkāparṇî (*Hydrocotyle asiatica*) and Madhuka (liquorice). (52.) Within one month he will obtain a good memory, and within twelve months he will be able to reproduce from memory whatever he hears once only, without any decay. (53.) With the same treatment, he will live for a hundred years or for two hundred years, if administered in proportion; and if he goes on continually repeating the treatment, he will enjoy undecaying life.

(Verses 54—58.) In the case of gruels, *khaḍa* (medicated butter-milk), and decoctions; of electuaries, powders (*chûrṇa*) and antidotes; of pills, ointments and suppositories; of fumes and sternutatories; (55) of *pûṭapâka* (roasted drugs), refrigerants, sudorifics, emetics and eye-lotions; and in the case of any other medicaments, not named, when the proportion is not mentioned, (56) the portions of the ingredients should be equal; of honey and clarified butter, there should be a double portion; but of treacle one should take a threefold, and of ground white sugar a fourfold portion. (57) In the case of powders (*pêshya*), when no liquid is prescribed, water should be understood *to be taken*.<sup>37</sup> In the case of curdled milk, urine, milk, clarified butter, hair, horn and hoof, (58) one should prescribe all these to be taken from the cow, so also in the case of all honeys, to be taken from the common bee.<sup>38</sup>

<sup>36</sup> On *svarasa* see Dutt's Mat. Med., p. 9.

<sup>37</sup> On these medicaments see Dr. Dutt's Mat. Med., p. 9. For a *pûṭapâka* vegetable drugs are made into a paste, and tied up in the form of a ball in leaves of the *Eugenia jambolana* or *Ficus Bengalensis*, after which the ball is covered with a layer of clay and roasted in a cowdung fire. When the clay becomes brick-red, the roasting is completed. The roasted drug is now taken out, and given either in the form of a pill or powder or its juice is expressed and given with honey or other adjuncts.—*Khaḍa* is said to be butter-milk boiled with acid vegetables and spices.

<sup>38</sup> With this compare Sâsruta's directions on honey, and urine in I, 45. He only, says, that the honey of the common bee is the best (*pravaram*), but allows seven other varieties. He makes a similar remark with reference to cow's urine, that it should be used by preference, as being the most effective (*mâtṛa-prayôga-sâdhyaeshu gavga-mûtram prayôjayêt*); but he also permits the use of the urine of other domestic animals. The only reference to other animal substances that I can find occurs at the end of I, 37, where the following are mentioned: blood, hair, nails, milk, urine and fœces; but there is nothing to limit them to products of the cow.



(Verse 59.) With Dâḍima (pomegranate) and Tvacha (cinnamon) one should boil one and a half portion of pungent (Indian mustard) oil<sup>39</sup>: this causes the growth of the ears, and of the female and male genital organs.

(Verses 60—66.) One should boil half a pala of the root of Chitraka (*Plumbago zeylanica*), likewise of Trivṛit (*Ipomœa turpethum*) and Sâtālâ (*Stereospermum suaveolens*); (60) and one karsha<sup>17</sup> each of the roots of Dantî (*Baliospermum montanum*) and ....., and likewise of long pepper, rocksalt, asafoetida and sorrel, (61) and fore-most twenty (*karsha*?) of chebulic myrobalan .....

#### Fourth Leaf: Obverse:

From these one should carefully prepare ten boluses with eight pala<sup>17</sup> of treacle, (62.) and take one of them on every tenth day. After it one should drink warm water for the purpose of correcting the defects of the humours; (63.) then, after the purgative has taken effect, one should bathe and may then return to one's ordinary diet.<sup>40</sup> There

<sup>39</sup> I. e., oil of the *Brassica juncea* or *Sinapis ramosa*, largely used by Indians as an article of food as well as an unguent, and known as *kaḍuvā* or *kaṇuvā tēl* 'pungent oil', as distinguished from *mīṭhā tēl*, the sweet oil of the *Sesamum indicum*.

<sup>40</sup> Compare with this the formula in *Suśruta* I, 44 (p. 166). There are fewer ingredients and the proportions are different, but the chief ingredients are the same; they are also to be made up in boluses of 8 pala of treacle and one bolus to be taken every tenth day, with warm water after it. It seems also to be the same with the *gudāshṭaka* or "eight treacle" formula of the *Bhāvaprakāśa*, quoted in Dr. Dutt's *Mat. Med.*, p. 231. The quantity of treacle is to be equal in weight to the other ingredients. This agrees with the formula in our MS., according to which there are  $\frac{1}{2}$  pala each of Chitraka, Trivṛit and Sâtālâ ( $=1\frac{1}{2}$  pala), one karsha or  $\frac{1}{4}$  pala each of the other 6 ingredients ( $=1\frac{1}{2}$  pala), and 20 karsha or 5 pala of Myrobalan, total 8 pala, equal to the 8 pala of treacle. The *Suśruta* formula, I suspect, is wrongly translated by Dr. Chatterjea (p. 211). It runs as follows: *gudasy=āshṭa-palē pathyā vimśatīḥ syuh palam palam | dantī-chitrakayōḥ karṣaṇ pippalī-trivṛitōr=daśa || kṛitv=aitān=mōḍakān=ēkam daśamē 'hani | tataḥ khādēd=ushṇa-tōya-sēvī niryāntrāṇs=tv=imē*. This would seem to mean: "In 8 pala of treacle there should be (mixed), pala for pala, 20 karsha of Pathyā, two karsha (i. e. one karsha each) of Dantī and Chitraka and ten karsha (i. e. 5 karsha each) of Pippalī and Trivṛit. Of this mixture make boluses and take one every tenth day, with warm water after it. This is an unlimited remedy." Here the ingredients consist of  $20 + 2 + 10$  karsha, i. e.,  $5 + \frac{1}{2} + 2\frac{1}{2}$  pala, total 8 pala, equal to 8 pala of treacle. — I take Sâtālâ to be the *Stereospermum suaveolens*; it is mentioned as a purgative in the second list given in *Suśruta* I, 39, where Dr. Dutt translates it (p. 176) with *Jasminum sambac*. In the third list (p. 177), also of purgatives, however, he translates it with *Stereospermum suaveolens*, and as a synonym of Pâtālâ which also occurs in the second list. I may add that in his *Mat. Med.* (p. 190) the *Jasminum sambac* is not described as a purgative drug.



should never be any hesitation with regard to this remedy, either in word or deed or thought. (64.) It is a purgative composed by Agasti, fit for princes, and which can be used in all seasons. It prevents old age and death; it cures all diseases; (65.) it also acts as an aphrodisiac and alterative tonic, and increases memory and health. It should never be administered to any one who has no son nor disciple; (66.) nor should it be given to an enemy of the king, nor to any other sinful liver.

(Verses 67—69.) Both Panchamūla (the five drugs)<sup>41</sup>, Madhuka (liquorice), Guḍūchī (*Tinospora cordifolia*), Rāsnā (*Vanda Roxburghii*), Aśvagandhā (*Withania somnifera*), Dēvadāru (*Pinus deodāra*), Pāṭhā (*Stephania hernandifolia*), Tvacha (cinnamon), the two Bala<sup>42</sup>, Tagara (*Tabernaemontana coronaria*), and seeds of Tila (sesamum); Mūrvā (*Sansevieria zeylanica*), Kulattha (*Dolichos uniflorus*), Nalada (Indian spikenard) and Ghana<sup>43</sup>; (68.) Punarnavā (*Boerhaavia diffusa*), and the fruit and bark of Vēṇu (bamboo); Jivantī<sup>44</sup>, also Êlā (cardamom), Aguru (aloe), and Jivaka<sup>45</sup>; root of Êraṇḍa (castor-oil plant) together with its fruit and sprouts, flowers of Kuraṇḍa<sup>46</sup>, and Mahaushadha<sup>47</sup>: (69.)

<sup>41</sup> On these *pancha-mūla* or “five drugs” see Dr. Dutt’s Hindu Mat. Med., pp. 145, 146. They are distinguished as the lesser (*hrasva*) and the greater (*vrihat*). The former comprise the *Sālaparnī* (*Desmodium Gangeticum*), *Prīṣṇiparnī* (*Uraria lagopodioides*), *Kaṇṭakārī* (*Solanum Jaquinii*), *Vrihatī* (*Solanum indicum*), and *Gôkshura* (*Tribulus terrestris*). The latter include the *Vilva* (*Aegle marmelos*), *Syônaka* (*Calosanthus indica*), *Gambhārī* (*Gmelina arborea*), *Pātālā* (*Stereospermum suaveolens*), and *Ganīkarikā* (*Premna spinosa*). Both sets are together known as the *daśa-mūla* or ‘the ten drugs’ or the *dvi-pancha-mūlā*.

<sup>42</sup> This is the *Sida*, of which, however, Dr. Dutt in the Hindu Mat. Med., p. 120, mentions four kinds: cordifolia, rhomboidea, rhombifolia, and alba. The two *Balā* here referred to are probably the *Balā* or *Sida cordifolia* and the *Atibalā* or *Sida rhombifolia*. See the 5th list in *Suśruta I*, 39.

<sup>43</sup> The text has *ghana*, which may simply mean ‘much’, qualifying *Naladam* ‘spikenard’; but it seems preferable to take it as the name of a separate drug; it is said to be the same as *Musta* or *Cyperus rotundus*; see the Glossary to the Bibliotheca Indica edition of the *Aśvavaidyaka*.

<sup>44</sup> *Jivantī* = *Caelogyne ovalis*, in Dutt’s Mat. Med., p. 301, but according to Watt’s Econ. Prod., pt. v, p. 85, it would seem to be the *Cimicifuga foetida*. It is mentioned in the 17th list of *Suśruta I*, 38, where the commentary of Dallana Mishra says that it has a fruit with a milky juice, resembling the fruit of *Latārka*, and that it is popularly known as *Dôḍikā*.

<sup>45</sup> The *Jivaka* is also called *Kāreha-śīrshaka*, but its identity is no more known. It is one of the drugs which formed part of the group known to the ancients as the *ashṭa-varga* or ‘group of eight drugs.’ See *Suśruta I*, 38 (transl., p. 157).

<sup>46</sup> *I. e.*, *Corchorus antichorus*, according to Watt’s Econ. Prod., pt. v, p. 97, but the dictionaries seem to identify it with *Kuraṇḍa*, which is *Barleria prionitis* according to Watt, *ibid.*, p. 53. See also the 2nd list in *Suśruta I*, 38 (transl., p. 138).

<sup>47</sup> This lit. means ‘great drug’, and is the name of various plants, such as

two or three of these *drugs* should be boiled in the milk of goats or cows or sheep mixed with water, and then, with the addition of a little rocksalt, the mixture may, in a tepid state, be applied as a lotion in eye diseases caused by the windy humour.<sup>43</sup>

(Verses 70—72.) Dârvî (Indian barberry), Utpala (blue lotus), Padmaka, Tunga, Yâshâ, Mêdâ, Mṛiṇâla (leaf-stalk of the lotus)<sup>49</sup>, Madhuka (liquorice), Samangâ (*Mimosa pudica*); Kâliyaka (yellow sandal), Parpatâka (*Oldenlandia herbacea*) and Latâ<sup>50</sup>, also Drâkshâ (raisins), Kâshmarya (*Gmelina arborea*) and Parûshaka (*Grewia asiatica*); (71) roots of Gundrâ (*Panicum uliginosum*), of Naḍa (*Phragmites karka*) and of Vêtasâ (*Calamus rotang*), and calyxes of flowering grasses<sup>51</sup>; Pra-

ginger, garlic, long pepper, etc. I do not know which of them may be intended here.

<sup>43</sup> In this formula there is a curious mixture of nominative and accusative cases. If the words from *Guḍâchî* down to *Tvacham* be read as forming one compound, all the names may be taken as accusatives, except *Tilâś-cha*, *Jîvantî*, *Elâ* and *Jîvakaś-cha*. The form *Kulatthân*, which is undoubtedly an accusative plural, would show that the whole series is intended to be in the accusative case, with which is to be understood some verb like *dadyât* or *kāpayêt*, "he should take". *Tilâś-cha* is a nominative plural, but might be easily turned into an accusative, by reading *Tilâm* (*Tilân*) = ś = *cha*, the omission of the anusvâra being a clerical error. But the difficulty cannot be got over in a similar way in the case of *Jîvantî*, *Elâ* and *Jîvakaś-cha*. It is more probable, therefore, that the whole series is intended for nominatives.

<sup>49</sup> *Mṛiṇâla* is the leaf-stalk of the true lotus, *Nelumbium speciosum*.—*Tunga* is the name of several things, but is probably here the stamens of the flower of the true lotus, otherwise called *Padma-kêśara* or *Nalina-kêśara* (Sâsruta I, 38, lists 20, 22).—*Padmaka* is said to be "a sort of fragrant wood brought from Malva or Southern India" (Dr. Dutt's Mat. Med., p. 312); it is mentioned in lists 17, 19, 25 of Sâsruta I, 38, where the commentary of Dallana Mishra identifies it with *padma-kâshṭha*; but it appears to be a drug of uncertain identity, and looking to the connection in which the name appears (among other terms referring to the lotus) and to the form of the word itself, it may be suggested that *padmaka* refers to some part of a *padma* or lotus. The root of the *Nymphaea odorata* or sweet-smelling waterlily is used to prepare "a kind of liniment of a cooling and fragrant nature by which the Native Indians sometimes anoint themselves" (W. Ainslie's *Materia Medica of Hindoostan*, p. 118).—*Utpala* is the same as *Nilôtpala* or the blue lotus, *Nymphaea stellata*, a waterlily, but not the true lotus which is the *Nelumbium speciosum*.—The identity of *Mêdâ* is no more known; it occurs in the 17th list of Sâsruta I, 38; it is said to be one of the eight drugs constituting the *ashṭa-varga*, see note 45.—*Yâshâ* I cannot find anywhere mentioned; perhaps it is the same as *yâśâ* or *yavâśâ*, generally masc. *yâśa* or *yavâśa*, *Alhagi Maurorum*.

<sup>50</sup> I cannot identify this *Latâ*; it is the name of various plants.

<sup>51</sup> Perhaps the "grasses" here referred to are those constituting the *triṇa-sañjñaka* or 'group of five grasses' (Sâsruta I, 38; transl., p. 174). They consist of the *Kuśâ* (*Poa cynosuroides*), *Kâśa* (*Saccharum spontaneum*), *Sara* (*Saccharum sara*), *Durbha* (*Imperata cylindrica*) and *Kaṇḍêkshu* (*Saccharum officinarum*). They are

paṇḍarīka (root-stock of the lotus) and Kirātatikta ('Chireta' or *Ophelia chirata*), Bhadrāsri (sandal), Nimba (*Azadirachta indica*), Paṭōla (*Trichosanthes dioica*), Vâśâ (*Justicia adhatoda*): (72) two or three of these may be boiled in milk of a goat or a woman, and then, with the addition of sugar and honey, will make a very good lotion in eye diseases caused by bile and defects of the blood.

(Verses 73—75a.) The three acrids<sup>52</sup>, the three myrobalans<sup>50</sup>, Haridrâ (turmeric), Kâsisa (sulphate of iron), Jâtî (jasmin), Grihadhûma<sup>53</sup>, Jâtî<sup>54</sup>; also Lâkshâ (lac), Danti (*Baliospermum montanum*), Surasa (Tulsi or *Ocimum sanctum*) and Vacha (*Acorus calamus*); Pâthâ (*Stephania hernandifolia*), Âsvagandhâ (*Withania somnifera*), best Dêvadâru (*Pinus deodara*); (74) also Katphala (*Myrica sapida*), Êlâ (cardamoms), Aguru (aloe), Kaṇṭakârî (*Solanum jacquinii*), Rôdhra (*Symplocos racemosa*), Karañja (*Pongamia glabra*), Vrihati (*Solanum indicum*), S'va-damstrâ<sup>55</sup>: two or three of these may be boiled in water, and when cooled down to moderate warmth, (75a) they may be used, mixed with rocksalt and honey, as a lotion in eye diseases caused by phlegm: so the sages declare.

(Verses 75b—77a.) Parûshaka (*Grewia asiatica*), Âmrâtaka<sup>56</sup> (hog-plum), Tintîdika (tamarind), Vrikshâmla (hog-plum), Jambu (rose-apple), Âmra (mango), Kapittha (wood-apple), Kôla (*jujube*), (76) boiled with liquor of citron or tamarind or pomegranate or with various kinds of milk or with curdled milk or whey; also Dârvi (Indian barberry), Utpala (blue lotus) and the other above mentioned drugs, boiled with sour substances, make a lotion for the eyes, (77a) which, cooled down to moderate warmth by standing, and mixed with some rocksalt, will thoroughly cure any disease of the eyes caused by defects of the blood.

(Verse 77b—78a.) Having ascertained the exact circumstances<sup>57</sup>

said to remove disorders of the bile. However, according to Dutt's Mat. Med., p. 266, it is the roots of these grasses that are used.

<sup>52</sup> Also called *tryûshana* or *trikaṭu*; they are ginger, black pepper and long pepper.

<sup>53</sup> I cannot identify this plant; I do not find it explained anywhere. Could it be the *Gharikân* (*Agaricus officinalis* or *igniarius*) mentioned in Dr. Watt's Econ. Prod. of India, pt. v, p. 17?

<sup>54</sup> I do not understand why *jâtî* is mentioned twice. It is the name of several plants; but two different plants would hardly be indicated by the same name in the same formula.

<sup>55</sup> According to the Petersburg Dictionary: *Asteracantha longifolia*; according to others: the same as *Gôkshura* or *Tribulus terrestris* (Ainslie, p. 94, Dutt's transl., p. 157).

<sup>56</sup> The text is here mutilated; *Âmrâtaka* is the only word that occurs to me as suiting the traces left.

<sup>57</sup> Literally: the less and the more.



of a disease with regard to its being due to a particular assignable cause or its having arisen from the general condition of things<sup>53</sup>, (78a) an intelligent physician should determine *his line of treatment*.

(Verse 78b—79a.) The tender<sup>59</sup> roots of Êraṇḍa (castor-oil plant) with its fruit and sprouts, added to the milk of goats, is an excellent lotion which cures *any disease caused by vitiated* wind and blood : so good physicians declare.

(Verse 79b—80a.) Prapaṇḍarika (root-stock of the lotus), Madhuka (liquorice), Haridrâ (turmeric) ....., mixed with sugar, make a lotion which stops any disease due to *vitiated* bile and wind.

(Verse 80b—81a.) Nata<sup>60</sup>, S'vadamṣṭra<sup>55</sup>, Vrihatî (*Solanum indicum*), Tvacha (cinnamon) and Hrivêra (*Pavonia odorata*): these, boiled in goat's milk and water, and mixed with rocksalt, make a lotion which cures *any disease due to vitiated* wind and phlegm.

(Verse 81b—82a.) ..... Dârvi (Indian barberry) and best Madhuka (liquorice), boiled in the milk of a cow or a woman, and mixed with sugar, may be applied by a good physician as a lotion in *any disease due to* wind, blood and bile.

(Verse 82b—83a.) The three myrobalans<sup>60</sup>, finely pulverised and tied up in a piece of white linen and soaked in milk of a goat or a woman or in water, are a remedy in diseases caused by all the humours together.

(Verse 83b—84a.) Dârvi (Indian barberry), Haridrâ (turmeric), the three myrobalans<sup>60</sup>, Musta (*Cyperus rotundus*), mixed with sugar and

<sup>53</sup> I have noticed the term *samsarga-ja* in Suśruta I, 24 (transl., p. 111), where it forms, together with *ākasmika*, the two divisions of the diseases due to *daiva-bala* or preternatural causes. As the commentary explains, these diseases may be due either to an offence against a god or to the curse of a saint or such like, *i. e.*, to some distinct, assignable cause, in which case they are called *samsarga-ja* or 'due to concatenation'; or, on the other hand, they may be due to *karma*, *i. e.*, to some sin committed in a pre-existent life, *i. e.*, practically to no known cause, in which case they are said to be *ākasmika* or 'accidental.' I take *samsarga-ja* to have here this technical meaning: 'due to an assignable cause'; and in contradistinction, I take *sarva-samutthita* to mean 'due to (no particular assignable cause, but) to the general condition of things', to all the surrounding circumstances. I may note, here, that the Suśruta (I, 24) distinguishes between diseases that are *samsarga-ja* and those that are *upasarga-ja*. The former are those that are due to some assignable preternatural cause; the latter are those that are due to an assignable natural cause, *i. e.*, they are such diseases as arise in complication with others, *e. g.*, a disease that arises in complication with fever.

<sup>59</sup> *Vijarjara* is in the smaller Petersburg Dictionary said to mean, "morsch", "mürbe" (rotten, decaying); but it is rather the opposite of *jarjara*, 'old', 'decayed', and therefore means 'young' or 'tender.'

<sup>60</sup> This is said to be the same as *Tagara* (*Tabernaemontana coronaria*).



honey and infused in human milk, make a lotion which is said to be a capital remedy for diseases due to *defects of the bile, blood and wind*.<sup>61</sup>

(Verse 84b—85a.) Young roots and leaves of Êraṇḍa (castor-oil plant), and paste of Shashṭika rice, steeped in clarified butter, and applied by the hand of a young child,<sup>62</sup> is a remedy against the same diseases as mentioned in the case of the preceding prescription.

(Verse 86.) With the same drugs as are prescribed for the lotions, a physician should prepare sudorifics, puṭapâkas<sup>37</sup>, sternutatories<sup>63</sup>, refrigerants, potions of clarified butter, plasters and baths.

(Verse 87.) Plasters on the face are declared to be suitable for complaints of the seasons, to remove abhîlu<sup>76</sup>, freckles and blue-marks, and to be remedies against poisons and swellings.

(Verses 88—91.) (I) Tvach (cinnamon), Kshîrîṇî<sup>64</sup>, also Chandana (sandal) and Padmaka<sup>49</sup>, Gundrâ (*Panicum uliginosum*), Mṛiṇâla (leaf-stalk of the lotus), also Ghana<sup>43</sup> and Vâlaka<sup>65</sup>; (II) roots of Kuśa grass (*Poa cynosuroides*), Tagara (*Tabernaemontana coronaria*), Êlavâlû<sup>66</sup>, leaves of Tâlisa (*Pinus Webbiana*), Nalada (Indian spikenard) and Tila (sesamum) seeds; (89.) (III) Masûra (*Vicia lens*), Durvâ (*Cynodon dactylon*), Ama-yava (uncooked barley), Mṛiṇâla (leaf-stalk of the lotus) and juice of Yashṭimadhuka (liquorice) and Utpala (lotus); (IV) Sâilêya<sup>67</sup>, Musta (*Cyperus rotundus*), Aguru (aloe), and Jhâmaka<sup>68</sup>, Sthaṇḍyaka<sup>69</sup>, Êlâ (cardamoms),

61 Verse 84a is found, word for word, in the Vangasêna, on eye diseases, p. 788.

62 Or perhaps: 'by a dead hand', by the hand of a corpse. I do not understand the direction.

63 *Nâvana* or *nâvana* is given in the smaller Petersburg Dictionary, as meaning 'sternutatory.' I have met with the word in the Vangasêna, p. 789, in a similar juxtaposition with *tarpaṇa* and *âśchyôtana*. A *tarpaṇa* is a refrigerant drink made of flour of parched grain mixed with water.

64 The reading seems to be corrupt. I cannot find a drug *Kshîrîṇî*. There is *Kshîrîṇî* which is the name of several plants. There is also *Tvakkshîrâ* a name of *Tugâ* or *Tabashir*.

65 Apparently the same as *Bâlaka* (*Sida cordifolia*), mentioned in the 11th list of *Suśruta* I, 38 (transl., p. 164).

66 *Êlavâlû* is now unknown. It is mentioned as *Êlavâluka* in the 6th list of *Suśruta* I, 38 (transl., p. 161), where Dallana Mishra's commentary explains it as a reddish powder (*hari-vâluka*), resembling that of the seeds of the *Krishnagandhâ* (*Krishnagandhikaphala*). The latter is the same as the *Sîgru* or *S'ôbhâñjana* (*Moringa pterygosperma*), of which there exists a red variety (Dutt's Mat. Med., p. 118).

67 I cannot identify this. It is said to be the same as *Tâlaparnî* (*Anethum graveolens*); also a kind of lichen (Dutt's Mat. Med., p. 315); also several kinds of minerals. Here some plant is probably intended.

68 *Jhâmaka* is probably the same as (*i. e.*, a *prâkritized* form of) *Dhîyâmaka*, which is mentioned in the 11th list of *Suśruta* I, 38, where Dallana Mishra's commentary identifies it with *Katṛiṇa*, popularly called *Rôhish*. The latter is said to be "a fragrant grass" (Dutt's Mat. Med., p. 304), but its identity appears to be unknown.

69 I cannot identify this. It occurs in the 11th list of *Suśruta* I, 38, where

Tagara (*Tabernaemontana coronaria*), and Tila (sesamum) seeds; (90). (V) Tvak-patra (bark and leaves of cinnamon), Kushṭha (*Saussurea auriculata*), Aguru (aloe), and Jhāmaka<sup>63</sup>, Māṃsī (*Nardostachys Jatamansi*), Harēṇu (*Piper aurantiacum*) and Paripēlava<sup>70</sup>; (VI) Yasṭihva (liquorice), Rôdhra (*Symplocos racemosa*), Aguru (aloe) and Chandana (sandal), Punarnavâ (*Boerhaavia diffusa*), black Tila (sesamum) seeds and Latâ<sup>50</sup>: (91.) the six face-plasters, severally described in the foregoing half-verses as beneficial to the eyes of the people, should be applied in the summer and the other seasons, according as they remove in them the defects of the humours. Now listen to me as I explain this.

(Verse 92.) In the rainy season they are said to cure diseases due to *derangement* of the wind; in the autumn they are held to cure diseases due to *derangement* of the bile; in the summer they are held to cure diseases due to *derangement* of the blood; in the spring they are said to cure diseases due to *derangement* of the phlegm.<sup>71</sup>

(Verses 93—94.) Roots of Karpâsa (cotton-plant), Alâtâ, Uśira (*Andropogon muricatus*), Kâliyaka (yellow sandal), and the bark of plants with a milky sap, Bhadrâśrî (white sandal), ....., Yava (barley-corns): these are said to make plasters for the face beneficial to the complexion. (94.) These should be dried and then mixed with the urine of a cow, or with Kôla (jujube), tamarind and urine, or they may be dried and mixed with the juice of Mâtulunga (citron) and mustard, (and thus applied to the face).<sup>72</sup>

#### Fifth Leaf: Obverse.

(Verse 95.) ..... if the blood becomes painful or vitiated or emitted, face-plasters should be applied, at the same time that some

Dallana Mishra's commentary explains it by *Ghūṇēraka*, and Dr. Dutt translates it (p. 164) by "a sort of gall caused by an insect." The smaller Petersburg Dictionary, however, makes it to be "a kind of aromatic plant." Its identity would seem to be now unknown.

<sup>70</sup> I cannot identify this. The smaller Petersburg Dictionary says it is some plant allied to the *Cyperus rotundus*, which is the *Musta*.

<sup>71</sup> With this compare Suśruta's statements in Sūtrasthāna, chapt. 6 (p. 20, transl., p. 27). There six seasons are mentioned, each consisting of two months. The six seasons form three sets: 1, late rains and autumn, 2, winter and spring, 3 summer and early rains. Diseases due to bile arise and come to a head in the late rains and autumn, and are relieved in the winter (in our MS., in the autumn); diseases due to phlegm arise and come to a head in the winter and spring, and are relieved in the summer (in our MS. in spring); diseases due to wind arise and come to a head in the summer and early rains, and are relieved in the late rains (in our MS. in the rainy season). Disease due to deranged blood are not referred to at all in the Suśruta.

<sup>72</sup> I do not quite understand this formula: Alâtâ I cannot identify; nor do I know whether *āmbla* 'tamarind', or *ambla* 'sorrel', or *amla* 'vinegar' is intended.

oleaginous substance is given as a purgative and various secretories administered to the nose.<sup>73</sup>

(Verse 96.) Tvak-patra (bark and leaves of cinnamon), Māṃsī (*Nardostachys jatamansi*), Nata<sup>60</sup> and Chandana (white sandal), Manaḥsilā (realgar), Vyāghranakha<sup>74</sup>, Harēṇu (*Piper auranitiacum*); Âmbala (tamarind ?), Kushṭha (*Saussurea auriculata*), the two Surasā (Tulsi-plant), and the two Haridrā (turmeric)<sup>75</sup>, applied as a face-plaster, act as remedies against poison.

(Verse 97a.) Mûrvā (*Sansevieria zeylanica*), Aśvagandhā (*Physalis flexuosa*), the three Myrobalans<sup>80</sup>, Karañja (*Pongamia glabra*), applied as a face-plaster, act as a remedy against dropsy.

(Verse 97b.) Mûrvā, mixed with cow's urine, and applied as a face-plaster, is said to be a remedy against dropsy.

(Verse 98.) While a plaster is applied to the face of a patient, he should not laugh, nor weep, nor enjoy sleep, nor should he eat. Nor should he warm himself at a fire, nor let the plaster become dry.

(Verse 99.) Abhīlu and nīlīka<sup>76</sup>, moreover skin-diseases, freckles, and suppurating<sup>77</sup> eruptions of a person are instantly cured, and the eye and face relieved, through the application of a face-plaster.

(Verse 100.) If one laughs or eats while a plaster is applied to his face, his phlegm as well as his wind will be deranged, and if he sleeps, they will quickly grow to excess: in such a case secretories should be applied to the head, oleaginous substances also should be administered and fumes inhaled.<sup>78</sup>

<sup>73</sup> See note 78.

<sup>74</sup> *Vyāghranakha* is mentioned in the eleventh group of drugs in the *Suśruta* I, 38, p. 141. Dr. Dutt, in his translation (p. 164), says that it is "a fragrant substance like a nail, the operculum of *Purpura* and *Murex*." Dallana Mishra's commentary (p. 309) identifies it with *Vṛihannakha* or *Vṛihannakhī*.

<sup>75</sup> On the two *Surasā* (*Ocimum sanctum*) see Dallana Mishra's commentary to *Suśruta* I, 38 (8th list); also Dutt's *Mat. Med.*, p. 219. They are the white and black varieties of the Tulsi-plant. On the two *Haridrā* (*Curcuma longa*) see Dutt's *Mat. Med.*, p. 256: "The term *haridra-dvê*, or the two Turmeric, signifies turmeric and the wood of *Berberis Asiatica*. They are often used together ..., and their properties are said to be analogous."

<sup>76</sup> *Abhīlu* and *nīlīka* I cannot find in any dictionary. As the remedy is both for the eyes and the face, they would seem to denote two different kinds of eye-diseases, while the following group comprises various kinds of skin-diseases of the face.

<sup>77</sup> This is conjectural; the MS. has *sa-pīlpā* or perhaps *sa-pīlpam*. I cannot find the word *pīlpā* noticed in any Sanskrit dictionary. Hindī has a word *pīp* or *pīb* meaning 'suppuration,' 'pus,' and a verb *pībiyānā* 'to suppurate.' *Pīp* might go back to a Prākṛit form *pīppa*, and this to Sanskrit *pīlpā*.

<sup>78</sup> The *śirasā virēka* or *śiro-virēchana*, 'secretory applied to the head' is one of the *nāśya* or applications of medicated substances to the nose. Its object is to cause



(Verse 101.) If through the heat of a fire the face-plaster of a patient has melted, or if he has allowed it to become dry, then abhilu<sup>76</sup> and the other above mentioned diseases are said to *break out*. These should be relieved in the manner above explained.

(Verse 102.) Night-blindness, dimness of the eyes, inflammation of the head, inflammation of the eyes caused by deranged bile, moreover any other evils affecting the skin of the face, are instantly relieved through the application of a face-plaster.

(Verse 103.) In the case of any disorder of the eyes due to *derangement* of the phlegm and wind, in the case of the application of a secretory to the nose<sup>78</sup> of people suffering from catarrh, in the case of lock-jaw, and in the case of diseases of the head, it is said that face-plasters should be avoided.

(Verse 104.) A face-plaster should be made of the thickness of a quarter aṅgula; the middle sort should have the thickness of a third of an aṅgula, and the thickest should measure (half an aṅgula ?)<sup>79</sup>.

(Verses 105—107.) (I) Liquorice, Rôdhra (*Symplocos racemosa*), the three myrobalans<sup>80</sup>, leaf-stalk of the lotus, candied sugar, Kāchana (*Bauhinia variegata*), and red ochre; (II) Leaves and bark of cinnamon, cardamoms, aloe-wood, Deodar, Punarnavâ (*Boerhaavia diffusa*), Vyâghranakha<sup>74</sup>, and galena; (106)(III) Realgar, orpiment, Vrihatî (*Solanum indicum*), and cinnamon, Māṃsî (*Nardostachys jatamansi*), Harēṇu (*Piper aurantiacum*), and Paripêlava<sup>70</sup>; (IV) Galena, red ochre, Kāphala (*Myrica sepida*), and Śarivâ<sup>80</sup> mixed with sugar: (107.) the four mixtures, severally described in the foregoing half-verses, relieve diseases caused by the *derangement* of phlegm, blood, bile and wind; or they may be applied externally as pastes all about the eye up to the roots of the eye-lashes.

(Verse 108.) Rôdhra (*Symplocos racemosa*), iron smeared with a little clarified butter and finely powdered, or chebulic myrobalan, cinna-

a flow of secretion from the nose and thus to relieve cerebral congestion. Medicated oils applied for a similar purpose are called *Vriṇhana*. In affections of the head, eyes or nose, the fumes are drawn in through the nose. See Dr. Dutt's Hindu Mat. Med., pp. 17 and 20.

<sup>79</sup> This verse occurs, almost verbally the same, in the Vaṅgasēna, in the chapter on the treatment of minor diseases (*kṣudra-rôga*), p. 715, verse 44. Its second half-line there runs thus: *madhyamas=tu tri-bhāgaḥ syād=uttamo=rdh-aṅgulô bhavêt*. There is also a warning given there against putting on or keeping on dry plasters, corresponding to verse 101 of our manuscript.—An 'aṅgula' is  $\frac{3}{4}$  inches or 2 centimeters. The thickness of the ordinary plaster accordingly should be  $\frac{1}{8}$  of an inch or  $\frac{1}{2}$  centimetre; that of the thickest would be  $\frac{3}{8}$  of an inch or 1 centimeter.

<sup>80</sup> There are two different plants called by this name. Here the *Ichnocarpus frutescens* is probably intended; see Dr. Dutt's Hindu Mat. Med., p. 196.



mon, an equal quantity of Vṛihatī (*Solanum indicum*) and galena, made into a paste, may be used as a remedy in all diseases.

(Verse 109.) Red ochre, rasôt,<sup>81</sup> galena, realgar, calx of brass in equal parts, mixed with a little black pepper, a double portion of .....

#### Fifth Leave: Reverse.

(Verse 110.) With pepper and calx one should boil Harita<sup>82</sup> on a slow fire together with clarified butter. This will make an ointment and paste for the eyelids.<sup>83</sup>

(Verse 111.) Listen to (the treatment of the hair and its diseases) as it is being explained *by me* .....

(Verse 112.) Derangement of the chyle, indulgence in sexual intercourse, and vitiation of the bile and blood cause premature grey hair, and in the cause of an old man it is due to old age.

(Verses 113—115.) The constitution of a woman is generally phlegmatic; lying ..... enjoying, they discharge the vitiated menstrual blood. (114) Hence their scalp becomes relieved of the heat of their blood and bile, and thus they do not loose their hair, and therefore women are not bald-headed. (115) On the contrary the blood and bile of men become vitiated; (this destroys) the roots of their hair, and the head becomes bald.

(Verse 116.) Baldness, consisting in the entire loss of hair or in its becoming copper-coloured, if it is long established on the head, cannot be removed. *But* if it is of recent origin, it may be remedied and should be carefully attended to.<sup>84</sup>

<sup>81</sup> On *rasôt* or *rasôñjana*, an extract of *Berberis Asiatica*, see Dr. Dutt's Hindu Mat. Med., p. 107.

<sup>82</sup> *Harita* is the name of gold, also of several plants, especially *Phaseolus mungo*. I do not know what may here be intended.

<sup>83</sup> On *viḍālaka* see Dutt's Hindu Mat. Med., p. 18.

<sup>84</sup> Compare the *Charaka*, p. 798, where also three defects of the hair are mentioned: *khālitya* 'baldness', *palita* 'grey hair', and *hari-lôman* 'red hair.' The latter corresponds to the *tāmra-bala* of our MS., and is called *indra-lupta* in the *Suśruta* and *Vangasēna*. The latter two works have identical remarks on the subject; see *Suśruta* II, 13 (p. 288, verses 209, 30) and *Vangasēna*, p. 724 (verses 134, 135). They call the three diseases *indra-lupta*, *khālitya* and *palita*, and explain the former two kinds as two forms of loss of hair (*prachyāvati rômāni*), and *palita* as making the hair grey (*kēśūn pachati*). I imagine the disease, intended by *tāmra-bala*, to be the "scald-head" (*Porrigio declavans*), which causes the formation of a yellowish or reddish scurf on the scalp and a partial loss of hair.

(Verses 117—119.) In the case of baldness or grey hair one should in the first place have frequent recourse to blood-letting; the application of emetics *also* is advantageous for the purification of the vitiated blood; (118.) afterwards, when the stomach is clear, (suitable food) should be taken. Also different kinds of oil and hair-colouring substances should be applied, (119.) and also drugs that cause the production and growth of hair. *Frequent* washings of the hair too are beneficial, because they remove what is injurious to them.

(Verse 120.) A wise physician should administer clarified butter, mixed with sweet, sour and salty substances, to a patient suffering from cough caused by *derangement* of the wind, either in his food or by itself, according to the state of his vital power.

(Verses 121 and 122.) Wheat and rice may be eaten, with the broth of the flesh of water-animals, marsh-animals or domestic animals, and with treacle and onions and *any other* sour, oleaginous, pungent or sweet things<sup>85</sup>. (122.) Spirit of rice with cream, or warm water and syrup may be drunk at will, when one is suffering from wind and cough, *also* plenty of oleaginous substances with treacle, or milk.

(Verse 123.) An electuary prepared from ginger, Shadī (*Curcuma zedoaria*), raisins, Śrīngī (*Rhus succedanea*), long pepper and Bhārgī (*Clerodendron siphonanthus*), mixed with treacle and *sweet* oil, is beneficial to sufferers from cough caused by *derangement* of the wind.<sup>86</sup>

<sup>85</sup> A similar direction occurs in the Charaka, p. 735 (bottom), and in the Chakradatta, p. 210, No. 1. The latter explains that by the *grāmya* or domestic animals are meant such as the cock (*kukkuta*), by the *ānūpa* or marsh animals, such as the hog (*śākara*), by the *udaka* or water-animals, such as the turtle (*kachchhapa*). This does not, however, seem to quite agree with the classification of the Suśruta. That work (p. 198, transl., p. 259) divides the animals into 6 classes: *jālē-śāya* (water), *ānūpa* (marsh), *grāmya* (domestic), *kravya-bhūja* (carnivorous), *ēka-sapha* (one-hoofed), *jāṅgala* (wild). Of these the three first-named classes are those mentioned in our MS. The Suśruta adds another division into only two classes: the *jāṅgala*, including the four last-named of the above six classes, and the *ānūpa*, comprising the two first-named. The *jāṅgala* class of this second division is subdivided into 8 sub-classes, among which there is a *vishkīra* (bird) and also a *grāmya* sub-class. Here the cock (*kukkuta*) does not belong to the *grāmya*, but to the *vishkīra*; but perhaps in the original classification into 8 classes, it would have been counted among the *grāmya*. To the *grāmya*, as a sub-class, belong only quadrupeds, such as the horse, cow, goat, sheep, etc. The *ānūpa* class of the second division has 5 sub-classes, among which there is a *kūla-chara* (shore-walker) and a *kośa-stha* (sheath-clad) sub-class. To the former belongs the hog (*varāha* or *śākara*), to the latter, the turtle (*kūrma* or *kachchhapa*). Herein the Chakradatta agrees with the Suśruta.

<sup>86</sup> The identical formula occurs in the Vaṅgasēna, p. 260, verse 14, and is quoted in the Chakradatta, p. 210, No. 2, (Dutt's Mat. Med., p. 140). But in these works, the first half-line is differently arranged and runs as follows: *Bhārgī drākṣā*

(Verse 124.) A powder made of long pepper, Māruta, Ajāji (*Nigella sativa*), Shaḍi (*Curcuma zedoaria*), Pushkara and Chitraka (*Plumbago zeylanica*), and mixed with rocksalt, is beneficial to sufferers from cough due to derangement of the wind.<sup>87</sup>

(Verses 125—127.) One should boil thirty pala<sup>17</sup> of Kaṇṭakāri (*Solanum jacquini*) in one āḍhaka of water, till it has been reduced to one-fourth of its quantity; and when it has clarified, one should add an equal number of palas of treacle in a waterjar: (126.) then with powders of Nāgara (dry ginger), Bhārgi (*Rhus succedanea*), cardamoms, long pepper, Shaḍi (*Curcuma zedoaria*) and Chitraka (plumbago), and with four palas of clarified butter and sweet oil, one should boil it, (127.) till it attains to the consistency of an electuary, and when it has become cold, one should add two palas of honey and one pala of powdered long pepper, and then lick it as a remedy against cough.<sup>88</sup>

(Verse 128.) One should boil a paste of Bhārgi (*Rhus succedanea*) and clarified butter with an infusion of the Daśamūla (or Ten-drugs) [in the broth of a cock or a partridge]. This is an excellent remedy against cough due to derangement of the wind.<sup>89</sup>

*śaṭi śringt pippalī vishvabhēshajaiḥ.* Somewhat similar formulas are those of the Vaṅgasēna, p. 260, No. 13 and p. 261, No. 15, and those of the Charaka on p. 733 (bottom), commencing with *durālabhām* and *duḥsparsām*. In fact Vaṅgasēna No. 15 is identical with the Charaka's *durālabhām*, etc.—The drug, called *shaḍi* in our MS., appears to be the same as what is usually called *śaṭi*.

<sup>87</sup> This formula I have not been able to trace anywhere else. Two of its ingredients I cannot identify. *Māruta* would seem to be the same as *Kaṭphala* (see Watt's Economic Prod., pt. v, p. 188), the S. Indian name of which is *Marutamtolī* or *Marudampatai*. *Pushkara* appears to be unknown at the present day. See Dr. Dutt's Hindu Mat. Med., p. 314, who says: "this root is not available; the root of *Aplotavis auriculata* (*Kushṭha*) is substituted for it. See, however, Watt's Econ. Prod., pt. v, p. 232, *Saussurea Lappa*. *Ajāji* is the same as *kālājāji* or *krishṇa-jīraka*.

<sup>88</sup> With this formula may be compared a somewhat similar, though much shorter one, in the Charaka, p. 732, which is quoted in the Chakradatta, p. 219, No. 77. It runs as follows: *kaṇṭakāri-guḍāchābhyaṁ prithak triṃśat-palād-rasē | prasthāḥ siddhō ghṛitād-vāta-kāsa-nud-vahnī-dīpanaḥ*.

<sup>89</sup> This formula is found, verbally the same, in the Vaṅgasēna, p. 261, verse 16, where it is called the "*daśa-mūl-ādyam ghṛitam*." It is also quoted in the Chakradatta, p. 216, No. 70. The only difference is, that these two works read *daśamūlī-kashāyēṇa*. According to the Charaka, p. 20, there are five kinds of *kashāya* or 'extracts': 1, the *svarasa* or the 'simple juice' squeezed out of some substance; 2, *kalka* or a 'paste' made of a pounded substance and its juice; 3, *śrita* or the 'decoction' of a substance; 4, *śīta* or a 'cold infusion', obtained by allowing a substance to soak for a night; 5, *phaṇṭa* or 'hot infusion', obtained by throwing a substance into hot water and squeezing it. See also Dutt's Mat. Med., pp. 9, 10. From the wording of the formula it is not clear which kind of *kashāya* is here intended; but the commentary in the Chakradatta interprets it as being the *śrita* or *kvātha*, i. e., a decoction over fire.

(Verse 129.) In a prastha of the juice of Kaṇṭakārī (*Solanum jacquinii*) one should boil a kuḍava<sup>17</sup> of clarified butter with a paste of Punarnavā (*Boerhaavia diffusa*). This is an excellent remedy against cough due to *derangement* of the wind.

(Verse 130.) One should boil a paste of Bhārgî (*Rhus succedanea*) and clarified butter, mixed with an equal quantity of the juice of Vyāghrî (*Solanum jacquinii*),<sup>90</sup> in four parts of curdled milk. This makes an excellent remedy for cough due to *derangement* of the wind.<sup>91</sup>

(Verse 131a.) In the case of a bilious *cough* the drinking of clarified butter together with the use of purgatives is beneficial.

<sup>90</sup> Vyāghrî is another name of Kaṇṭakārî; see e. g., the formula No. 3, on p. 220 of Dutt's Mat. Med.

<sup>91</sup> This formula is found, verbally the same, in the Vaṅgasēna, p. 261, verse 17, where it is called the "*bhārgy-ḍḍi-ghṛita*." The second half-line reads here *bhārgṭ-rasam dviguṇitam*, but this is certain to be a false reading for *vyāghrî-rasam*, as the *bhārgṭ* is already included in the first part of the formula. The traces '*vāghṭ*' are quite distinct in our MS. The phrase *vyāghrî-rasa-dviguṇitam*, lit. 'doubled by the juice of Vyāghrî', I take to mean "Vyāghrî juice equal in quantity to the other two ingredients"; but it might also mean "two parts of Vyāghrî"; and this latter would be the only meaning of the reading (*rasam*) in the Vaṅgasēna. Practically, however, it makes no difference, whichever translation is adopted.





# I N D E X

TO

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FOR 1891.

**A** GASTI Samhitā, a medical work, p. 150.

Alghú, coins of, p. 10.

Alphabets, of North India, p. 81.

———— Sáradá, p. 83, 90, 92.

Antiquities, at Bijnor, p. 2, 3.

———— at Junagadh, p. 17.

Archaeological excavations in Bijnor, p. 1.

Atísa, life of, p. 46.

**B** ENGALI place names, p. 74.

Bhotiyás of Sikkim, p. 55.

———— of Bhotan, p. 57.

———— of Tibet, p. 57.

———— river names, p. 61.

———— mountain names, p. 65.

———— place names, p. 73.

Bijnor, antiquities at, p. 1.

Boria or Lakha Medi Stúpa, p. 17.

Bower Manuscript, date of, p. 79.

———— first instalment of, p. 135.

Búáyán, coins of, p. 15.

Buddhist, tablets, p. 4, 5.

———— relics from the Boria stúpa, p. 19.

Buyán Qulí, coins of, p. 14.

**C** HAGHATÁI Mughals, p. 8.

———— their dynastic marks,

p. 8.

———— list of, p. 9.

———— coins of, p. 10.

Chaitya, p. 2, 3, 5, 6.

Coins, Indo-scythic, p. 1.

———— silver, of recent date, p. 2.

———— of the Chaghatái Mughals, p. 8.

———— Mughal mints of, p. 8.

Cousens, H., Boria or Lakha Medi Stúpa, p. 17.

**D** AGOBA, p. 22.

Dánishmandjeh, coins of, p. 13.

Darjiling district, names in, p. 53.

———— dialects in, p. 57.

Dás, Bábú S. C., life of Atísa, p. 46.

Dharmapála, Buddhist hierarch, p. 47.

Dharmapála, king of Suvarṇadvípa, p. 53.

Dipankara Srijñāna, see Atísa.

Driver, W. H. P., notes on Kolarian tribes, p. 24.

Duk-pa (Bhotiyás), p. 57.

Dynastic marks of Chaghatái Mughals, p. 8.

**E** XCAVATIONS in Bijnor, p. 1.

**G** ÖMPAS, names of, p. 68.

Gorkhas, p. 57.

Gupta alphabets, p. 81.

**H** A-shang-rgyal-po and Ugtad, a Tibetan Dialogue, p. 37.

History of Ladakh, p. 97.

Hoernle, Dr. A. F. Rudolf, on the date of the Bower MS., p. 79.

———— first instalment of Bower MS. p. 135.

**J** AIN tablets, p. 4, 5.

Jankshí, coins of, p. 12.

Junagadh, stúpa near, p. 17.

**K** ABÁK, coins of, p. 11.

Kutlagh Khhwája, coins of, p. 16.

Khalil, coins of, p. 13.

Kolarian tribes, notes on, p. 24.

Koroas, Kolarian tribe, p. 24.

Koroas, list of words, p. 24.  
 ——— history of, 25.

**L**ADAKH, history of, p. 97.  
 Lepcha, p. 53, 54.  
 ——— river names, p. 59.  
 ——— mountain names, p. 54.  
 ——— place names, p. 71.  
 Limbu, Mongoloid race, p. 56.

**M**ARKHAM, A. M., Report on archaeological excavations in Bijnor, p. 1.  
 Marx, K., a tibetan dialogue, p. 37.  
 ——— documents relating to history of Ladakh, p. 97.  
 Medals or seals, Buddhist, p. 5, 6.  
 Medicine, Hindu works on, p. 139, 144, 149, 150.  
 Mint towns of Chaghatái Moghuls, p. 8.  
 Monasteries, names of, p. 68.  
 Mor Dhaj, old ruined fort at, p. 2, 7.  
 Mountain names in Darjiling district and Sikkim, p. 63.  
 Mughals, Chaghatái, p. 8.  
 ——— coins of, p. 10.

**N**AMES of places and rivers in the Darjiling district and Sikkim, p. 53.  
 ——— of mountains, p. 63.  
 ——— of passes, p. 57.  
 Nepáls or Pahariyás, p. 36.  
 ——— river names, p. 62.  
 Nyáyapála, king of Magadha, p. 50, 53.

**O**LIVER, E. E., coins of the Chaghatái Moghuls, p. 8.

**P**AHARIYÁ Kharia, Kolarian tribe, p. 28.  
 ——— list of words, p. 28.  
 Pahariyás of Nepal, p. 56.  
 ——— river names, p. 62.

Pahariyá mountain names, p. 66.  
 ——— place names, p. 74.  
 Pass names in the Darjiling district and Sikkim, p. 67.  
 Place-names in Darjiling district and Sikkim, p. 53, 38.  
 Pö-pa, p. 57.

**Q**AZAN, coins of, p. 13.  
 Qará Halákú, coins of, p. 10.

**R**ATNA Vajra, Buddhist hierarch, p. 47.  
 Relics from the Boria or Lakka Medi Stúpa, p. 19.  
 River-names in Darjiling district and Sikkim, p. 53, 59.  
 Rong-ring (Lepcha), p. 57.

**S**ALAI, of copper, p. 7.  
 Sanjar, coins of, p. 12.  
 Savaras, Kolarian tribe, p. 32.  
 Seals, ancient Buddhist, p. 5.  
 Shigrí, name of ancient mount, p. 2.  
 Sikkim, population of, p. 57.  
 ——— names in, p. 53.  
 ——— Bhotiyás, p. 55.  
 ——— Tibetans, p. 55.  
 Sabors, Kolarian tribe, p. 32.  
 ——— list of words, p. 37.  
 Stúpa, p. 4, 17.  
 ——— relics from, p. 19.

**T**ABLETS, Buddhist or Jain, p. 4, 5.  
 Tarmáshírfn, coins of, p. 11.  
 Tip, old mound at, p. 1.

**V**ANGASÊNA, a medical work, p. 150.  
 Vikramaśilá, a Vihára in Magadha, p. Villages, names of, p. 71.

**Y**ASUN, coins of, p. 12.











